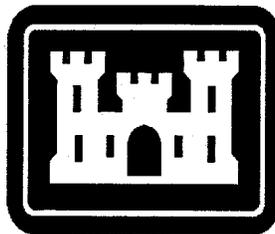


OPERATION AND MAINTENANCE
RED LAKE RIVER
RED LAKE RESERVATION, MINNESOTA

**SPECIFICATIONS
FOR**

**RED LAKE CONTROL STRUCTURE
REHABILITATION**

SEPTEMBER 2000



**US Army Corps
of Engineers**
St. Paul District

RED LAKE RIVER
RED LAKE RESERVATION

RED LAKE CONTROL STRUCTURE
REHABILITATION

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SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>		1. SOLICITATION DACW37-00-B-0011	2. TYPE OF <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATE (RFP)	3. DATE 29-Sep-2000	PAGE OF PAGES 1 OF 115
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.					
4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST W81G67-0059-9822		6. PROJECT	
7. ISSUED BY CONTRACTING USACE - ST PAUL 190 5TH STREET ST PAUL, MN 55101-1638		CODE DACW37	8. ADDRESS OFFER <i>(If Other Than Item 7)</i> See Item 7		CODE
9. FOR CALL:	A. NAME Parveen K. Vij		B. TELEPHONE <i>(Include area code) (NO COLLECT CALLS)</i> 651-290-5421		
SOLICITATION					
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and					
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE <i>(Title, identifying no., date):</i>					
<p>The Red Lake Control Structure is located at the outlet to the Red Lakes just upstream of the Minnesota Department of Transportation Highway 1 bridge over the Red Lake River. The structure is located in the Red Lake Band of Chippewa Indians Reservation which is located approximately 30 miles north of Bemidji, Minnesota in Clearwater and Beltrami Counties.</p> <p>The proposed repairs to the Red Lake Control Structure includes concrete repair including concrete sawcutting, removal and replacement and repair of cracks in vertical walls by epoxy injection; remove and replace pavement approaches; wall anchoring which includes installation of tie rods, wales and sheet pile deadman; riprap replacement; painting sluice gates; installation of stop logs; replacement of upstream hand rails; miscellaneous repairs including painting stoplog hatch covers, repairs to the subdrain, lowering the grade behind wingwalls; and control of water. This procurement is a competitive, set aside small business with SIC Code 1629. (For informational purposes only, the small business size standard is \$27.5 Million). Estimated magnitude of construction in terms of physical characteristics and estimated price range is \$100,000 and \$200,000.</p>					
11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>380</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See 52.211-10;0800 .)					
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i>				12B. CALENDAR DAYS	
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				10	
13. ADDITIONAL SOLICITATION					
A. Sealed offers in original and <u>0</u> copies to perform the work required are due at the place specified in Item 8 by <u>14:00:00</u> (hour) local time <u>10/31/00</u> (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 <input checked="" type="checkbox"/> is, <input type="checkbox"/> 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 <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.					

SOLICITATION, OFFER, AND AWARD

(Construction, Alteration, or Repair)

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR <i>(Include ZIP Code)</i>		15. TELEPHONE NO. <i>(Include area code)</i>
		16. REMITTANCE ADDRESS <i>(Include only if different than Item 14)</i>
		See 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 requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES
---------	------------------------

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

AMENDMENT NO.										
DATE										

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

21. ITEMS ACCEPTED:
SEE SCHEDULE

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>	ITEM	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	CODE	27. PAYMENT WILL BE MADE BY	CODE
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CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> 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 or incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> 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 <i>(Type or print)</i>	31A. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>
30B. SIGNATURE	30C. DATE
31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

SECTION 00010 Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	STRUCTURE DEWATERING FFP PURCHASE REQUEST NUMBER W81G67-0059-9822	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002	REMOVALS FFP				XXXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AA	GUARDRAIL, REMOVE AND REINSTALL FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002AB	HANDRAIL, REMOVE AND DISPOSE FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003	BITUMINOUS PAVEMENT REMOVAL FFP				XXXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AA	FIRST 650 SY-IN (1-Inch Thick) FFP	650.00	Square Yard		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003AB	OVER 650 SY-IN (1-Inch Thick) FFP	250.00	Square Yard		
0004	EXCAVATION FFP	150.00	Cubic Yard		
0005	BACKFILL FFP	1,200.00	Cubic Yard		
0006	TOPSOIL FFP	125.00	Cubic Yard		
0007	SEEDING FFP	740.00	Square Yard		
0008	BITUMINOUS BASE COURSE FFP	310.00	Square Yard		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009		310.00	Square Yard		
	BITUMINOUS SURFACE COURSE AND TACK COAT FFP				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010		26.00	Cubic Yard		
	AGGREGATE BASE COURSE FFP				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011					
	RIPRAP FFP				XXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011AA		100.00	Dry Ton		
	FIRST 100 TONS FFP				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011AB		70.00	Dry Ton		
	OVER 100 TONS FFP				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0012		1.00	Lump Sum		
	SUBDRAIN REPAIR FFP				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0013	CONCRETE REPAIR UPSTREAM LEFT CORNER FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0014	CONCRETE REPAIR, (FRAPMC) FFP				XXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0014AA	FIRST 20 CUBIC FEET FFP	20.00	Cubic Feet		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0014AB	OVER 20 CUBIC FEET FFP	10.00	Cubic Feet		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0015	JOINT SEALANT FFP				XXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0015AA	FIRST 14 LF FFP	14.00	Linear Foot		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0015AB	OVER 14 LF FFP	4.00	Linear Foot		
0016	Crack Preparation for EPOXY INJECTION FFP				XXXXX
0016AA	CRACK PREPARATION FIRST 25 LF FFP	25.00	Linear Foot		
0016AB	CRACK PREPARATION OVER 25 LF FFP	15.00	Linear Foot		
0017	EPOXY INJECTION FFP				XXXXX
0017AA	EPOXY INJECTION FIRST 1 GALLON FFP	1.00	Gallon		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0017AB	EPOXY INJECTION OVER 1 GALLON FFP	1.00	Gallon		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0018	Crack Preparation for POLYURETHANE INJECTION FFP				XXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0018AA	CRACK PREPARATION FIRST 75 LF FFP	75.00	Linear Foot		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0018AB	CRACK PREPARATION OVER 75 LF FFP	35.00	Linear Foot		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0019	POLYURETHANE INJECTION FFP				XXXXX

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0019AA	POLYURETHANE. INJECTION FIRST 3 GALLONS FFP	3.00	Gallon		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0019AB	POLYURETHANE. INJECTION OVER 3 GALLONS FFP	15.00	Gallon		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0020	ANCHOR SYSTEM FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0021	HANDRAILING FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0022	PAINTING FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0023	SLUICE GATE REHABILITATION FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0024	ELECTRICAL FFP	1.00	Lump Sum		

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0025	BONDS FFP	1.00	Lump Sum		

TOTAL ESTIMATED AMOUNT: \$ _____

SPECIAL INSTRUCTIONS:

The work described in this solicitation will be performed in an area which is within the exterior boundaries of the Red Lake Reservation. The Red Lake Band of Chippewa Indians have enacted a Tribal Employment and Contracting Rights Ordinance which may impose certain requirements via taxes, fees, wage rates, or employment policies that may affect the contractor. The contractor is required to comply with all applicable lawful tribal requirements in the performance of the work (reference FAR Clause 52.236-7, Permits and Responsibilities). For information regarding the Tribal Employment and Contracting Rights Ordinance and other Tribal ordinances and regulations, bidders may contact the following office:

Mr. Bryan Lussier Sr.
 TERO Compliance Officer
 Red Lake Band of Chippewa Indians
 Box 416
 Redby, Minnesota 56670 (telephone: 218-679-3350)

The bidders attention is also directed to FAR Clause 52.222-26, Equal Opportunity, part (b)(1) which provides:

The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living in or near an Indian Reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

SECTION 00100 Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.209-4001 BIDDER'S QUALIFICATIONS (APR 1984) FAR 9.105-1

Before a bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

52.214-4001 INQUIRIES - BID INFORMATION

(a) Inquiries:

Any questions regarding this solicitation should be directed to Mr. Parveen Vij, Contract Specialist, at telephone number (651) 290-5421 (collect calls not accepted). It is requested that all technical questions on the plans and specifications be submitted to the Contract Specialist by facsimile transmission to (651) 290-5706.

The Planholder's List and bid results can be found on the St. Paul District web site at <http://www.mvp.usace.army.mil> (click on "Contracts", then "Bid Solicitations").

(b) Bid Depository/Bid Opening Information:

Bids must be deposited prior to the date and time set for opening of bids. The bid depository is located in the Contracting Division, 6th Floor, of the St. Paul District, Corps of Engineers Centre, 190 Fifth Street East, St. Paul, Minnesota 55101-1638. A public bid opening will be held at the same location.

52.214-4002 ALL OR NONE QUALIFICATIONS (APR 1984) FAR 14.404-5

A bidder/offeror must quote on all items in this solicitation to be eligible for award. The Government will award on a "All or None" basis. Evaluation of bids/offers will be based, among other factors, upon the total price quoted for all items.

52.219-4004 SMALL BUSINESS SIZE STANDARD FOR CONSTRUCTION AND SPECIAL TRADES (FAR 19.101 & 19.102)

Annual receipts of a concern which has been in business for 3 or more complete fiscal years means the annual average gross revenue of the concern taken for the last 3 fiscal years. Annual receipts of a concern that has been in business for less than 3 complete fiscal years means its total receipts for the period it has been in business, divided by the number of weeks including fractions of a week that it has been in business, and multiplied by 52.

SIC	DESCRIPTION	SIZE STANDARDS IN MILLIONS OF DOLLARS <u>Final Rule</u>
DIVISION C - CONSTRUCTION		
MAJOR GROUP 15 - BUILDING CONSTRUCTION - GENERAL CONTRACTORS AND OPERATIVE BUILDERS		
1521	General Contractors - Single-Family House	\$17
1522	General Contractors - Residential Buildings, Other Than	

Single-Family	17
1531 - Operative Builders	17
1541 - General Contractors - Industrial Buildings and Warehouses	17
1542 - General Contractors - Nonresidential Buildings and Warehouses	17

MAJOR GROUP 16 - CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION - GENERAL CONTRACTORS	
1611 - Highway and Street Construction, Except Elevated Highways	\$17
1622 - Bridge, Tunnel, and Elevated Highway Construction	17
1623 - Water, Sewer, Pipe Line, Communication and Power Line Construction	17
1629 - Heavy Construction, Except Dredging, N.E.C. (Not Elsewhere Covered)	17
1629 - Dredging and Surface Cleanup Activities	(1)\$13.5

MAJOR GROUP 17 - CONSTRUCTION - SPECIAL TRADE CONTRACTORS	
1711 - Plumbing, heating (except electric), and air-conditioning	\$7
1721 - Painting, paperhanging, and decorating	7
1731 - Electrical 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	7
1752 - Floor laying and other floorwork, N.E.C.	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, N.E.C.	7
1799 - Special trade contractors, N.E.C.	7
x1 - Base House Maintenance	(2) \$7

(1) To be considered small, a firm must perform the dredging of at least 40 percent of the yardage with its own dredging equipment or equipment owned by another small dredging concern.

(2) If one of the activities in base maintenance, as defined in SIC - 7369, can be identified with a separate industry, and that activity (or industry) accounts for 50 percent or more of the value of an entire contract, then the proper size standard shall be that for the particular industry, and not the base maintenance size standard.

"Base maintenance" constitutes three or more separate activities. These activities may be either service or special trade construction related activities. As services, these activities must each be in a separate industry. These activities may include but are not limited to such separate maintenance activities as Janitorial and Custodial Service, Protective Guard Service, Commissary Service, Fire Prevention Service, the Safety Engineering Service, Messenger Service, and Grounds Maintenance and Landscaping Service. If the contract involves the use of special trade contractors (plumbing, painting, plastering, carpeting, etc.) all such specialized special trade construction activities will be considered a single activity, which is Base Housing Maintenance. This is only one activity of base maintenance and two additional activities must be present for the contract to be considered base maintenance. The size standard for Base Housing Maintenance is \$7 million, the same size standard as for Special Trade Contractors.

52.232-38 SUBMISSION OF ELECTRONIC FUNDS TRANSFER INFORMATION WITH OFFER (MAY 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

- (1) The solicitation number (or other procurement identification number).
- (2) The offeror's name and remittance address, as stated in the offer.
- (3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.
- (4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.
- (5) The offeror's account number and the type of account (checking, savings, or lockbox).
- (6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.
- (7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(End of provision)

52.236-4002 WORK PERFORMED BY THE CONTRACTOR

The successful bidder must furnish the Contracting Officer within 10 days after the award, the items of work which he will perform with his own forces, the percentage of the total work this represents, and the estimated cost thereof. (See Section 00700, clause entitled ("52.219-14").

52.236-4005 UNAVAILABILITY OF UTILITY SERVICES

The responsibility shall be upon the Contractor to provide and maintain at its expense, adequate utilities for its use for construction and domestic consumption, and to install and maintain necessary connections and lines for same, but only at such locations and in such manner as may be approved by the Contracting Officer. Before final acceptance, temporary connections and lines installed by the Contractor shall be removed in a manner satisfactory to the Contracting Officer.

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

52.214-1 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)

52.214-3 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)

52.214-4 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)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(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 and date specified for receipt, the solicitation number, and the name and address of the bidder.

- (b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.
- (c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.
- (d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.
- (e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

52.214-6 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)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

- (a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.
- (b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--
 - (i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or
 - (ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.
- (2) However, 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.
- (c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.
- (d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to

be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB 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 at 52.214-31, 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)

52.214-12 PREPARATION OF BIDS (APR 1984)

(a) Bidders are expected to examine the drawings, specifications, Schedule, and all instructions. Failure to do so will be at the bidder's risk.

(b) Each bidder shall furnish the information required by the solicitation. The bidder shall sign the bid and print or type its name on the Schedule and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(c) For each item offered, bidders shall (1) show the unit price, including, unless otherwise specified, packaging, packing, and preservation and (2) enter the extended price for the quantity of each item offered in the "Amount" column of the Schedule. In case of discrepancy between a unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

(d) Bids for supplies or services other than those specified will not be considered unless authorized by the solicitation.

(e) Bidders must state a definite time for delivery of supplies or for performance of services, unless otherwise specified in the solicitation.

(f) Time, if stated as a number of days, will include Saturdays, Sundays, and holidays.

(End of provision)

52.214-15 PERIOD FOR ACCEPTANCE OF BIDS (APR 1984)

In compliance with the solicitation, the bidder agrees, if this bid is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the bidder) from the date specified in the solicitation for receipt of bids, to furnish any or all items upon which prices are bid at the price set opposite each item, delivered at the designated point(s), within the time specified in the Schedule.

(End of clause)

52.214-18 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.

52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(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.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

52.232-15 PROGRESS PAYMENTS NOT INCLUDED (APR 1984)

A progress payments clause is not included in this solicitation, and will not be added to the resulting contract at the time of award. Bids conditioned upon inclusion of a progress payment clause in the resulting contract will be rejected as nonresponsive.

52.232-38 SUBMISSION OF ELECTRONIC FUNDS TRANSFER INFORMATION WITH OFFER (MAY 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

(1) The solicitation number (or other procurement identification number).

(2) The offeror's name and remittance address, as stated in the offer.

(3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.

- (4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.
- (5) The offeror's account number and the type of account (checking, savings, or lockbox).
- (6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.
- (7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Department of the Army
St. Paul District, Corps of Engineers
190 Fifth Street East
St.Paul, MN 55101-1638

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

(End of provision)

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

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

- (b) Site visits may be arranged during normal duty hours by contacting:
 - Name: John Blackstone
 - Address: **USACE, 190 E 5th St. St.Paul, MN 55101**
 - Telephone: **(651) 290-5429**

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

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

<http://www.arnet.gov/far>
<http://farsite.hill.af.mil>
<http://www.dtic.mil/dfars>

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any Far (48 CFR Chapter I) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

SECTION 00600 Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

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

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered;

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

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

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

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

(2) (i) Has been authorized, in writing, to act as an 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 clause)

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

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

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

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

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

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

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (MAR 1996)

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

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

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

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

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

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

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

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

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract

award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

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

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

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

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 1999) ALTERNATE I (OCT 1998) & ALTERNATE II (NOV 1999)

(a)(1) The standard industrial classification (SIC) code for this acquisition is 1629.

(2) The small business size standard is \$27.5mil.

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

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

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124-1002.

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

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

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

(ii) It ____ is, ____ is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(4)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. ([The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.]) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(5) [(Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.)] The offeror shall check the category in which its ownership falls:

- _____ Black American.
- _____ Hispanic American.
- _____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).
- _____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).
- _____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).
- _____ Individual/concern, other than one of the preceding.

(c) Definitions. "Joint venture," for purposes of a small disadvantaged business (SDB) set-aside or price evaluation preference (as prescribed at 13 CFR 124.321), is a concern that is owned and controlled by one or more socially and economically disadvantaged individuals entering into a joint venture agreement with one or more business concerns and is considered to be affiliated for size purposes with such other concern(s). The combined annual receipts or employees of the concerns entering into the joint venture must meet the applicable size standard corresponding to the SIC code designated for the contract. The majority of the venture's earnings must accrue directly to the socially and economically disadvantaged individuals in the SDB concern(s) in the joint venture. The percentage of the ownership involvement in a joint venture by disadvantaged individuals must be at least 51 percent.

"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 in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

"Small disadvantaged business concern," as used in this provision, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more 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 or more 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 Part 124.

"Women-owned small business concern," as used in this provision, means a small business concern--

- (1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

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

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

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

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

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

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

The offeror represents that --

- (a) It has, has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;
- (b) It has, has not, filed all required compliance reports; and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 1996)

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

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

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-

Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

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

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

(ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

(iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(iv) The facility does not fall within Standard Industrial Classification Code (SIC) designations 20 through 39 as set forth in FAR section 19.102 of the Federal Acquisition Regulation; or

(v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

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

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

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

(c) "Disclosure."

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

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

(End of provision)

252.225-7003 INFORMATION FOR DUTY-FREE ENTRY EVALUATION (MAR 1998)

(a) Does the offeror propose to furnish—

(1) A domestic end product with nonqualifying country components for which the offeror requests duty-free entry; or

(2) A foreign end product consisting of end items, components, or material of foreign origin other than those for which duty-free entry is to be accorded pursuant to the Duty-Free Entry--Qualifying Country Supplies (End Products and Components) clause or, if applicable, the Duty-Free Entry--Eligible End Products clause of this solicitation?

Yes () No ()

(b) If the answer in paragraph (a) is yes, answer the following questions:

(1) Are such foreign supplies now in the United States?

Yes () No ()

(2) Has the duty on such foreign supplies been paid?

Yes () No ()

(3) If the answer to paragraph (b)(2) is no, what amount is included in the offer to cover such duty? \$_____

(c) If the duty has not been paid, the Government may elect to make award on a duty-free basis. If so, the offered price will be reduced in the contract award by the amount specified in paragraph (b)(3). The Offeror agrees to identify, at the request of the Contracting Officer, the foreign supplies which are subject to duty-free entry.

252.225-7017 PROHIBITION ON AWARD TO COMPANIES OWNED BY THE PEOPLE'S REPUBLIC OF CHINA (FEB 2000)

(a) Definition. "People's Republic of China," as used in this provision, means the government of the People's Republic of China, including its political subdivisions, agencies, and instrumentalities.

(b) Prohibition on award. Section 8120 of the Department of Defense Appropriations Act for fiscal year 1999 (Pub. L. 105-262), as amended by Section 144 of Title I, Division C, of the Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999 (Pub. L. 105-277), prohibits the award of a contract under this solicitation to any company in which the Director of Defense Procurement (Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics)) has determined that the People's Republic of China or the People's Liberation Army of the People's Republic of China owns more than 50 percent interest.

(c) Representation. By submission of an offer, the offeror represents that the People's Republic of China or the People's Liberation Army of the People's Republic of China does not own more than 50 percent interest in the offeror.

(End of provision)

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

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

(b) Representation. The Offeror represents that it:

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

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

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

(End of provision)

SECTION 00700 Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-4001 DEFINITIONS (MAY 1995) EFARS Part 2.101

"Chief of Contracting Office" means the Chief of the Contracting Division at a District, or the Director of Contracting at a Division, Center, Laboratory, or other support activity.

"Command" means each USACE Division, each USACE District, The U.S. Army Engineering and Support Center (HNC), Transatlantic Programs Center (TAC), Transatlantic Programs Center (Europe) (TAE), Topographic Engineer Center (TEC), Cold Regions Research and Engineering Laboratory (CRREL), Construction Engineering Research Laboratory (CERL), Humphreys Engineering Center Support Activity (HECSA), and Waterways experiment Station (WES).

"Commander" means the commanding officer of each USACE district and each USACE division, and the director or commander of HNC, TAC, TAE, ETL, CRREL, CERL, HECSA and WES.

"Head of Contracting Activity (HCA)" for USACE means the Chief of Engineers.

Centers. For determining contracting authority levels for this regulation, Centers (HNC, and TAC) will equate to a Division. As a subordinate unit to TAC, TAE's contracting authority will therefore equate to that of a district.

Level higher than the contracting officer. When a District or TAE chief of contracting is the contracting officer, a "level higher than the contracting officer" means the Division or Center Director of Contracting. When an operating Division, Center or Laboratory Director/Chief of Contracting is the contracting officer a "level higher than the contracting officer" means the PARC.

Local Cooperation Agreements (LCAs). See Project Cooperation Agreements.

Project Cooperation Agreements. Formerly referred to as Local Cooperation Agreements, these are agreements under 31 U.S.C. 6305 and 42 U.S.C. 1962d-5b. They are not contracts as defined by the FAR.

"USACE and HQUSACE" means the United States Army Corps of Engineers and its headquarters, respectively.

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984)

(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 \$540.00 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.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.232-35 DESIGNATION OF OFFICE FOR GOVERNMENT RECEIPT OF ELECTRONIC FUNDS
TRANSFER INFORMATION (MAY 1999)

(a) As provided in paragraph (b) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration, the Government has designated the office cited in paragraph (c) of this clause as the office to receive the Contractor's electronic funds transfer (EFT) information, in lieu of the payment office of this contract.

(b) The Contractor shall send all EFT information, and any changes to EFT information to the office designated in paragraph (c) of this clause. The Contractor shall not send EFT information to the payment office, or any other office than that designated in paragraph (c). The Government need not use any EFT information sent to any office other than that designated in paragraph (c).

(c) Designated Office:

Mailing Address:

U.S. Army Corps of Engineers
St. Paul District
190 East Fifth Street
St. Paul, MN 55101-1638

Telephone Number:

651/290-5233

Person to Contact:

Mr. Wayne Scheffel, CEMVP-RM-F

Electronic Address:

wayne.scheffel@usace.army.mil

(End of clause)

52.236-15 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.

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

- (2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.
- (3) Lack of registration in the CCR database will make an offeror ineligible for award.
- (4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.
- (c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.
- (d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr2000.com>.

(End of clause)

52.202-1 DEFINITIONS (OCT 1995) --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) "Commercial component" means any component that is a commercial item.
- (c) "Component" means any item supplied to the Federal Government as part of an end item or of another component.
- (d) "Nondevelopmental item" means--
- (1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;
- (2) Any item described in paragraph (e)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or
- (3) Any item of supply being produced that does not meet the requirements of paragraph (e)(1) or (e)(2) solely because the item is not yet in use.
- (e) "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.
- (f) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

52.203-3 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) of this clause, 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)

52.203-5 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)

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(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 any kickback. The Contracting Officer may order the 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 this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) 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, regulation, or under this contract.

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract 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 designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(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, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(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)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(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:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) 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:

- (1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.
- (3) A special Government employee, as defined in section 202, title 18, United States Code.
- (4) 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)

52.204-4 PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

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

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postconsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

Printed or copied double-sided means printing or reproducing a document so that information is on both sides of a sheet of paper.

Recovered material, for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 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 \$25,000, 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 Federal Procurement and Nonprocurement 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 Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement 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)

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

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 387 calendar days. The time stated for completion shall include final cleanup of the premises.

52.211-18 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.

52.214-29 ORDER OF PRECEDENCE--SEALED BIDDING (JAN 1986)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order: (a) the Schedule (excluding the specifications); (b) representations and other instructions; (c) contract clauses; (d) other documents, exhibits, and attachments; and (e) the specifications.

(End of clause)

52.219-6 NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (JUL 1996)

(a) Definition.

"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 size standards in this solicitation.

(b) General. (1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to a small business concern.

(c) Agreement. A small business concern submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States. The term "United States" includes its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed \$25,000, a small business concern may furnish the product of any domestic firm. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 1999)

(a) It is the policy of the United States that small business concerns, HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women 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, HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women.

(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) Definitions. As used in this contract (1) Small business concern means a small business as defined pursuant to section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

(2) HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(3) Small business concern owned and controlled by socially and economically disadvantaged individuals and small disadvantaged business concern mean a small business concern that represents, as part of its offer that--

(i) It has received certification as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B;

(ii) No material change in disadvantaged ownership and control has occurred since its certification;

(iii) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(iv) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

(4) Small business concern owned and controlled by women means a small business concern--

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

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

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

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--

- (1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.
- (2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.
- (3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.
- (4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis ;
 - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
 - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
 - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (JUL 1995)

- (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 mechanics 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 exceeding \$100,000 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.

52.222-6 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.

(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.

52.222-7 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.

52.222-8 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 the 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 WH-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.

52.222-9 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.

52.222-10 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.

52.222-11 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.

52.222-12 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.

52.222-13 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.

52.222-14 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 or their representatives.

52.222-15 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.

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, 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, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees 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 Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

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

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

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

Goals for minority participation for each trade	Goals for female participation for each trade
2.9%	6.9%

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

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

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

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

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is **Minnesota (All Counties)**.

52.222-26 EQUAL OPPORTUNITY (FEB 1999)

(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) of this clause. 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. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(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. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(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; in 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 subparagraphs (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 officer 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.

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

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

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"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 Deputy Assistant Secretary 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) of this clause.

(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 on-site 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 rest rooms and necessary dressing or sleeping areas 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) of this clause. 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) of this clause, 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) of this clause, 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 Deputy Assistant Secretary 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.

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).

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

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

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(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 disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era 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 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 employment openings with the appropriate office of the State employment service.

(3) The listing of 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.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(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 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 Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), 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 disabled veterans and veterans of the Vietnam Era.

(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 Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(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 disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(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 individuals with disabilities; 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. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be 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 individuals with physical or mental disabilities.

(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 \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of 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 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 September 30 of each year beginning September 30, 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. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 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. 4212.

(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)

52.223-6 DRUG-FREE WORKPLACE (JAN 1997)

(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 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 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 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 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 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; and

(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 while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (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)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 1996)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

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

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) designations 20 through 39 as set forth in section 19.102 of the Federal Acquisition Regulation (FAR); or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

52.225-9 BUY AMERICAN ACT--TRADE AGREEMENTS--BALANCE OF PAYMENTS PROGRAM— CONSTRUCTION MATERIALS (FEB 2000)

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

Component means any article, material, or supply incorporated directly into construction materials.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material 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 for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:
 ``none”

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act or Balance of Payments Program. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is noncompliant with the Buy American Act or Balance of Payments Program.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....			
Domestic construction material...			
Item 2			
Foreign construction material....			
Domestic construction material...			

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(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 the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(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 simplified acquisition threshold at (FAR) 2.101 to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.227-4 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.

52.228-1 BID GUARANTEE (SEP 1996)

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

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

(c) The amount of the bid guarantee shall be 20 percent of the bid price or \$n/a, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(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)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____(for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$ _____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States \$ _____.
This draft is drawn under Irrevocable Letter of Credit No. _____.

[Beneficiary Agency]

By: _____

(End of clause)

52.229-3 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)

52.229-5 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)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. 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.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) 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 also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) 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) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

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;

(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; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. 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 paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after 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) Retainage. 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) Title, liability, and reservation of rights. 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) Reimbursement for bond premiums. 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) Final payment. 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) Limitation because of undefinitized work. 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.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts 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. reproduce, prepare derivative works, distribute copies to the public, and (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.

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986) - ALTERNATE I (APR 1984)

(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. Unless otherwise stated in this contract, payments to an assignee of any amounts due or to become due under this contract shall not, to the extent specified in the Act, be subject to reduction or setoff.

(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.

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)

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 the date of an electronic funds transfer. Definitions of pertinent terms are set forth in section 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments. (1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that 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. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date shall be the 14th day after the date of the Contractor's payment request, 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. If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice, 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) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. 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, it shall be returned within 7 days after the date the designated billing office received the invoice, with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing 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. (The Contractor is encouraged to date invoices as close as possible to the date of mailing or transmission.)

(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 the 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.

(x) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.

(3) Interest penalty. 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. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.

(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) Computing penalty amount. 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 (e.g., tariffs). 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 principal payment amount approved by the Government until the payment date of such approved principal amount; and will 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 principal payment amount and will 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, the due date on the corrected invoice will be adjusted by subtracting from such date 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.

(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.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(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 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the 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) Prompt payment discounts. An interest penalty also shall 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) Additional interest penalty. (i) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with subdivision (a)(6)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor--

(A) Is owed an interest penalty of \$1 or more;

(B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

(1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or

(2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty, except--

(1) The additional penalty shall not exceed \$5,000;

(2) The additional penalty shall never be less than \$25; and

(3) No additional penalty is owed if the amount of the underlying interest penalty is less than \$1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(4)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(6)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. (1) Due dates for recurring financing payments. 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 [insert day as prescribed by Agency head; if not prescribed, insert 30th day] 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.

(2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve

recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(3) Interest penalty not applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Subcontract clause requirements. 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) Prompt payment for subcontractors. A payment clause that 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) Interest for subcontractors. An interest penalty clause that 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) Subcontractor clause flowdown. 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) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. 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) Withholding permitted. 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) Withholding requirements. 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 previously has been 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) Subcontractor withholding procedures. 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) Subcontractor notice. 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) Contracting Officer notice. 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) Subcontractor progress payment reduction. 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) Subsequent subcontractor payment. 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) Notice to Contracting Officer. 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) Interest to Government. 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) Third-party deficiency reports. (1) Withholding from subcontractor. 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, 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) Subsequent payment or interest charge. 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--

(i) Pay the amount withheld under subdivision (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) 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) Written notice of subcontractor withholding. 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) Subcontractor payment entitlement. 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) Prime-subcontractor disputes. 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) Preservation of prime-subcontractor rights. 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) Non-recourse for prime contractor interest penalty. 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.

52.233-1 DISPUTES. (DEC 1998)

(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 \$100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. 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, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim 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) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; 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 \$100,000 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 \$100,000, 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) If the 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 alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date 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)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), 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.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(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.

52.236-3 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.

52.236-4 PHYSICAL DATA (APR 1984)

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.
- (b) Weather conditions . Before submitting bids, bidders should satisfy themselves as to hazards that arise from weather conditions. Complete weather records and reports may be obtained from the local U.S. weather Service.
- (c) Transportation facilities. N/A.
- (d) River Conditions. Hydrographs of the Redlake River are shown on the contract drawings. The Contractor shall schedule operations as necessary to take advantage of the most favorable river stages ..

(End of clause)

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52.236-5 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.

52.236-6 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 worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

52.236-8 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.

52.236-7 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.

52.236-9 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.

52.236-10 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.

52.236-11 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.

52.236-12 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.

52.236-13 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.

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks 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.

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(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.

52.236-26 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.

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer 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)

52.242-14 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.

52.243-4 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.

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (OCT 1998)

(a) Definitions.

"Commercial item", as used in this clause, has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", as used in this clause, includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c) Notwithstanding any other clause of this contract, the Contractor is not required to include any FAR provision or clause, other than those listed below to the extent they are applicable and as may be required to establish the reasonableness of prices under Part 15, in a subcontract at any tier for commercial items or commercial components:

(1) 52.222-26, Equal Opportunity (E.O. 11246);

(2) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212(a));

(3) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793); and

(4) 52.247-64, Preference for Privately-Owned U.S.-Flagged Commercial Vessels (46 U.S.C. 1241)(flow down not required for subcontracts awarded beginning May 1, 1996).

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(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 (i) of this section.

(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, at no increase in contract price, 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.

52.247-34 F.O.B. DESTINATION (NOV 1991)

(a) The term "f.o.b. destination," as used in this clause, means--

(1) Free of expense to the Government, on board the carrier's conveyance, at a specified delivery point where the consignee's facility (plant, warehouse, store, lot, or other location to which shipment can be made) is located; and

(2) Supplies shall be delivered to the destination consignee's wharf (if destination is a port city and supplies are for export), warehouse unloading platform, or receiving dock, at the expense of the Contractor. The Government shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved before the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the Government acting in its contractual capacity. If rail carrier is used, supplies shall be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggyback") is used, supplies shall be delivered to truck tailgate at the unloading platform of the consignee, except when the supplies delivered meet the requirements of Item 568 of the National Motor Freight Classification for "heavy or bulky freight." When supplies meeting the requirements of the referenced Item 568 are delivered, unloading (including movement to the tailgate) shall be performed by the consignee, with assistance from the truck driver, if requested. If the contractor uses rail carrier or freight forwarded for less than carload shipments, the contractor shall ensure that the carrier will furnish tailgate delivery, when required, if transfer to truck is required to complete delivery to consignee.

(b) The Contractor shall--

(1)(i) Pack and mark the shipment to comply with contract specifications; or

(ii) In the absence of specifications, prepare the shipment in conformance with carrier requirements;

(2) Prepare and distribute commercial bills of lading;

(3) Deliver the shipment in good order and condition to the point of delivery specified in the contract;

- (4) Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by the consignee at the delivery point specified in the contract;
- (5) Furnish a delivery schedule and designate the mode of delivering carrier; and
- (6) Pay and bear all charges to the specified point of delivery.

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)

(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 (b)(6) of this clause; 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 in any other manner directed by the Contracting Officer.
- (c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) 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.

(e) 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.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining 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 (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, 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 modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

(i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;

(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 (g)(2)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(2)(i) of this clause, 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.

(3) 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.

(h) 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 (g) of this clause, 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.

(i) 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.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) 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.

(l) 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.

(m)(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.

(n) 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.

52.249-10 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 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.

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.

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://farsite.hill.af.mil>
<http://www.dtic.mil/dfars>

52.252-6 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 Far (48 CFR I) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

- (a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.
- (b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.
- (c) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

- (a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.
- (b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

- (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) 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 serving--

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

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 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 prohibition 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 the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(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 Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(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 exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

252.209-7003 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)

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

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) 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 identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

252.225-7010 DUTY-FREE ENTRY--ADDITIONAL PROVISIONS (AUG 2000)

(a) The requirements of this clause supplement the Duty-Free Entry clause of this contract.

Both of these clauses apply to this contract and subcontracts, including purchase orders, that involve supplies to be accorded duty-free entry whether placed--

- (1) Directly with a foreign concern as a prime contract; or
- (2) As a subcontractor purchase order under a contract with a domestic concern.

(b) The Contractor shall send the notification required by paragraph (b)(1) of the Duty-Free Entry clause of this contract to the Contracting Officer administering this contract.

(c) In addition to any data required by paragraph (b)(1) of the Duty-Free Entry clause, the Contractor shall furnish the following for all foreign supplies to be imported pursuant to paragraph (a) or (b) of the Duty-Free Entry clause. The Contractor shall furnish this information to the Contracting Officer administering the prime contract immediately upon award of any contract or subcontract involving supplies to be accorded duty-free entry.

- (1) Prime contractor's name, address, and CAGE code;
- (2) Prime contract number plus delivery order number, if applicable;
- (3) Total dollar value of the prime contract or delivery order;
- (4) Expiration date of the prime contract or delivery order;
- (5) Foreign supplier's name and address;
- (6) Number of the subcontract/purchase order for foreign supplies;
- (7) Total dollar value of the subcontract for foreign supplies;
- (8) Expiration date of the subcontract for foreign supplies;
- (9) List of items purchased; and
- (10) Certification by the purchaser of foreign supplies as follows: I certify that all supplies for which duty-free entry is to be claimed are to be delivered to the Government or incorporated in the end items to be delivered under this contract, and that duty shall be paid by the Contractor to the extent that such supplies, or any portion (if not scrap or salvage) are diverted to nongovernmental use other than as a result of a competitive sale made, directed, or authorized by the Contracting Officer.

(d) The Contractor agrees to incorporate the substance of this clause, including this paragraph (d), in any subcontract (including purchase orders) in accordance with paragraph (i) of the Duty-Free Entry clause of this contract. The Contractor agrees that the name and address of the Contracting Officer administering the prime contract (name and address of the contract administration office cognizant of the prime contract and its activity address number (appendix G of the Defense FAR Supplement)) and the information required by paragraphs (c)(1), (2), and (3) of this clause will be included in applicable subcontracts.

(e) To properly complete the shipping document instructions as required by paragraph (f) of the Duty-Free Entry clause, the Contractor shall insert Defense Contract Management (DCM) New York, ATTN: Customs Team, DCMDN-GNIC, 207 New York Avenue, Building 120, Staten Island, New York 10305-5013, as the cognizant

contract administration office (for paragraph (f) only) in those cases when the shipment is consigned directly to a military installation. :

- (1) Delivery order number on the Government prime contract, if applicable;
- (2) Number of the subcontract/purchase order for foreign supplies, if applicable;
- (3) Activity address number of the contract administration office actually administering the prime contract, e.g., for DCMC Dayton, S3605A.

(f) Except for shipments consigned to a military installation, the Contractor shall prepare, or authorize an agent to prepare, any customs forms required for the entry into the United States, its possessions, or Puerto Rico of foreign supplies in connection with DoD contracts. The Contractor shall submit the completed customs forms to the District Director of Customs with a copy to DCMAO New York for execution of any required duty-free entry certificates. For shipments containing both supplies which are to be accorded duty-free entry and supplies which are not, the Contractor shall identify on the customs forms those items which are eligible for duty-free entry under the provisions of the Duty-Free Entry clause. Shipments consigned directly to a military installation will be released in accordance with §§10.101 and 10.102 of the U.S. Customs regulations.

(g) The Contractor shall ensure that all exterior containers are marked in accordance with paragraph (g) of the Duty-Free Entry clause, including the following additional data--

- (1) "UNITED STATES GOVERNMENT, DEPARTMENT OF DEFENSE;" and
- (2) The activity address number for the contract administration office actually administering the prime contract.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (AUG 2000)

(a) The Contractor agrees to deliver under this contract only such of the following articles that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico --

- (1) Food;
- (2) Clothing;
- (3) Tents, tarpaulins, or covers;
- (4) Cotton and other natural fiber products;
- (5) Woven silk or woven silk blends;
- (6) Spun silk yarn for cartridge cloth;
- (7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics;
- (8) Canvas products ;
- (9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles); or
- (10) Any item of individual equipment (Federal supply Classification 8465) manufactured from or containing such fibers, yarns, fabrics, or materials.

(b) This clause does not apply --

- (1) To supplies listed in FAR section 25.104(a), or other supplies for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;
- (2) To foods which have been manufactured or processed in the United States, its possessions, or Puerto Rico;
- (3) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or
- (4) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--
 - (i) The fabric is to be used as a component of an end item that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--
 - (a) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);
 - (B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;
 - (C) Upholstered seats (whether for household, office, or other use); and
 - (D) Parachutes (Federal Supply Class 1670); or
 - (ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

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 concerns, 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)

252.227-7033 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.

252.236-7000 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.

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS. (DEC 1991)

(a) The Government --

(1) Will provide the Contractor, without charge, sets (five unless otherwise specified) of large-scale contract drawings and specifications except publications incorporated into the technical provisions 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 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:

Title File and Drawing No.

See Section 00830

252.243-7001 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.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD)
(MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.246-7000 MATERIAL INSPECTION AND RECEIVING REPORT (DEC 1991)

At the time of each delivery of supplies or services under this contract, the Contractor shall prepare and furnish to the Government a Material Inspection and Receiving Report in the manner and to the extent required by Appendix F, Material Inspection and Receiving Report, of the Defense FAR Supplement.

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

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

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

- (b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.
- (2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--
- (i) This contract is a construction contract; or
 - (ii) The supplies being transported are--
 - (A) Noncommercial items; or
 - (B) Commercial items that--
 - (1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);
 - (2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or
 - (3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.
- (c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --
- (1) U.S.-flag vessels are not available for timely shipment;
 - (2) The freight charges are inordinately excessive or unreasonable; or
 - (3) Freight charges are higher than charges to private persons for transportation of like goods.
- (d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --
- (1) Type, weight, and cube of cargo;
 - (2) Required shipping date;
 - (3) Special handling and discharge requirements;
 - (4) Loading and discharge points ;
 - (5) Name of shipper and consignee;
 - (6) Prime contract number; and
 - (7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.
- (e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of

Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information --

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief --

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
_____	_____	_____
_____	_____	_____
_____	_____	_____
TOTAL	_____	_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h), in all subcontractors under this contract that--

- (1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and
- (2) Are for a type of supplies described in paragraph (b)(3) of this clause.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(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--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

SECTION 00800 Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

52.000-4004 PARTNERING

The Government proposes to form a partnering relationship with the contractor. This partnering relationship will strive to facilitate communication and draw on the strengths of each organization in an effort to achieve a quality project, within budget, and on schedule. Participation will be totally voluntary. Partnering will not alter or supersede any provision of this contract nor will it provide either party with any additional contractual rights or obligations. Participation in partnering will not affect award of this contract. Any cost associated with this partnering will be agreed to by both parties and will be shared equally, with no change in contract price.

52.212-4003 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSES: 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
WORKDAYS BASED ON (5) DAY WORKWEEK.

GEOGRAPHIC LOCATION –Red Lake Indian Agency

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	19	14	9	4	4	5	5	4	4	3	7	17

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. 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 CLAUSES: DEFAULT (FIXED-PRICE CONSTRUCTION).

52.212-5000 EVALUATION OF SUBDIVIDED ITEMS (MAR 1995)--EFARS

Item Nos.2,3,11,14,15,16,17 are subdivided into two or more estimated quantities and are to be separately priced. The Government will evaluate each of these items on the basis of total price of its sub-items.

(End of provision)

52.212-5001 VARIATIONS IN ESTIMATED QUANTITIES, SUBDIVIDED ITEMS
(MAR 1995)--EFARS

This variation in estimated quantities clause is applicable only to Items Nos.3,11,14,15,16,17,18,19.

(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.3,11,14,15,16,17,18,19 is less than 85% of the quantity of the first sub-item listed under such item, 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 52.211-18, Variation in Estimated Quantities.

(c) If the actual quantity of work performed under Items Nos. 3,11,14,15,16,17,18,19 exceeds 115% or is less than 85% of the total estimated quantity of the sub-item under that item and/or if the quantity of the work performed under the second sub-item or any subsequent sub-item under Items Nos. n/a 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 52.211-18, Variation in Estimated Quantities.

(End of clause)

52.222-4008 DAVIS-BACON WAGE DETERMINATION - CONFLICTING SCHEDULES
MINNESOTA AND NORTH DAKOTA

Work under this contract will be performed in both Minnesota and North Dakota. Wage determinations for both Minnesota and North Dakota are included as attachments in Section 00830 of the specifications. Some work under this contract may require members of the contractor's work force to perform work in both states. The contractor shall segregate the work performed in each state and under each wage determination on its payrolls. In the event that it is impracticable to segregate an employee's work, or in the event of a conflict as to the place of performance of that work, the wage classification (and rate) resulting in the highest rate of pay/fringe benefits to that employee will apply.

52.228-4002 INSURANCE

As referenced in Contract Clause: INSURANCE--WORK ON A GOVERNMENT INSTALLATION, the following types and amounts of insurance are required under this contract.

Type	Amount
Worker's Compensation and Employer's Liability Insurance:	
Coverage A Worker's Compensation	Compliance with State of Minnesota Worker's Compensation Law
Coverage B Employer's Liability	\$ 100,000
General Liability Insurance:	

Bodily Injury	\$1,000,000 per occurrence
Property Damage	Not Required

Automobile Liability Insurance (Comprehensive Policy Form):

Bodily Injury	\$ 500,000 per person and \$1,000,000 per occurrence
Property Damage	\$ 100,000 per occurrence

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

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

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract 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)

52.228-4006 PERFORMANCE AND PAYMENT BONDS (FAR 28.102-2)

Within 10 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 sum of such bonds will be as follows:

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

b. Payment Bond.

(1) When the contract price is \$1,000,000 or less, the penal sum will be fifty percent (50%) of the contract price.

(2) 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.

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

Any bonds furnished will be furnished by the Contractor to the Government prior to commencement of contract performance.

52.228-4022 REQUIREMENT FOR BID GUARANTEE (FAR 28.101-2)

Each bidder shall submit with its bid a Bid Bond (Standard Form 24) with good and sufficient surety or sureties acceptable to the Government or other security as provided in the clause BID GUARANTEE in the form 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.

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

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

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

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

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

(End of clause)

52.232-5002 CONTINUING CONTRACTS (ALTERNATE) (MAR 1995)--EFARS

(a) Funds are not available at the inception of this contract to cover the entire contract price. The sum of \$2,500.00 has been reserved for this contract and is available for payment 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. The liability of the United States for payments beyond the funds reserved for this contract is contingent on the reservation of additional funds.

(b) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not be considered a breach of this contract, and shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (e) and (h) below.

(c) 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.

- (d) 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 this 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.
- (e) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. If and when sufficient additional funds are reserved, the contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of this 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.
- (f) 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 a "Suspension of Work" or similar clause or in any other manner under this contract.
- (g) 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.
- (h) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be at no cost to the Government, except that, to the extent that additional funds to make payment therefore are allocated to this contract, it may be treated as a termination for the convenience of the Government.
- (i) 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 this 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.
- (j) The term "Reservation" means monies that have been set aside and made available for payments under this contract.

(End of clause)

52.236-4012 MATERIAL SOURCES

- a. Concrete aggregate and stone protection materials meeting the requirements of these specifications can be produced from the sources listed in Section 00830 "Attachments":
- b. Materials may be furnished from any of the listed sources or at the option of the Contractor may be furnished from any other sources designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated.
- c. After the award of the contract, the Contractor shall designate in writing only one source for each type of material or one combination of sources from which he proposes to furnish the materials. If the Contractor proposes to furnish materials from a source or from sources not listed, he may designate only a single source for each type of material or single combination of sources for materials. Samples for acceptance testing shall be provided as required by the TECHNICAL PROVISIONS. If a source for materials 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 materials from approved sources selected from the list at no additional cost to the Government.

d. Approval of a source of materials is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable as determined by the Contracting Officer. Materials produced from an approved source shall meet all the requirements of the TECHNICAL PROVISIONS of these specifications.

52.239-4001 YEAR 2000 COMPLIANCE (FAR 39.106) (JUL 1998)

The contractor shall ensure that, with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically, the contractor shall perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Year 2000 compliance requirement.

52.222-4007 DAVIS-BACON WAGE DETERMINATION - CONFLICTING SCHEDULES
MINNESOTA AND SOUTH DAKOTA

Work under this contract will be performed in both Minnesota and South Dakota. Wage determinations for both Minnesota and South Dakota are included as attachments in Section 00830 of the specifications. Some work under this contract may require members of the contractor's work force to perform work in both states. The contractor shall segregate the work performed in each state and under each wage determination on its payrolls. In the event that it is impracticable to segregate an employee's work, or in the event of a conflict as to the place of performance of that work, the benefits to that employee will apply.

52.232-4004 INVOICE PROCEDURES

In accordance with CONTRACT CLAUSE titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS", the contractor shall submit invoices as follows:

a. In order to qualify for a periodic payment, the Contractor must submit a proper invoice (request for payment) to the Contracting Officer's Representative (COR) and a determination must be made that supplies or services conform to the contract requirements. This determination will be made for the sole purpose of processing progress payments and will not constitute formal acceptance. The due date for making progress payments shall be as stated in the contract clause: PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS.

b. The submitted request for payment must be accompanied with documentation adequate to substantiate the amount requested. Substantiation shall be consistent with the clauses in the solicitation titled Quantity Surveys, Purchase Orders, Invoices, etc. satisfactory to the COR.

c. The Contractor must also include with the payment request a certification as described in the Clause "PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS".

d. Payment requests will be reviewed for propriety by the COR. Defective invoices will be returned to the Contractor for resolution with defects identified. Along with the returned invoice, the COR may include, at its option, an ENG FORM 93-PAYMENT ESTIMATE reflecting the substantiated and uncontested payment amount. The Contractor will then be given the option of signing and returning the FORM 93 for payment along with the original invoice and certification or resubmitting a revised invoice and certification. To expedite payment, the Contractor may request in writing that the COR retain the defective invoice and immediately process the payment request at the amount determined to be acceptable to the Government.

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

“Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations 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 costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.
- (3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.
- (4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the 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.”

(End of Clause)

SECTION 00830

ATTACHMENTS

<u>ATTACHMENT</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	WAGE RATES	00830-1
2	MATERIAL SOURCES	00830-2

ATTACHMENT NO. 1

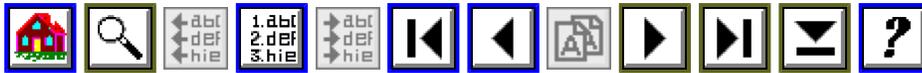
WAGE RATES

DECISION DESCRIPTION

PAGE NUMBERS

1. General Decision MN000059
State: MINNESOTA
Construction Type: Heavy

1 to 8



General Decision Number MN000059

General Decision Number MN000059
 Superseded General Decision No. MN990059
 State: **Minnesota**
 Construction Type:

HEAVY

County(ies):

AITKIN	KANABEC	PENNINGTON
BECKER	KANDIYOHI	PINE
BELTRAMI	KITTSOIN	PIPESTONE
BIG STONE	KOOCHICHING	POPE
BLUE EARTH	LAC QUI PARLE	RED LAKE
BROWN	LAKE	REDWOOD
CARLTON	LAKE OF THE WOODS	RENVILLE
CASS	LE SUEUR	RICE
CHIPPEWA	LINCOLN	ROCK
CLEARWATER	LYON	ROSEAU
COOK	MAHNOMEN	SIBLEY
COTTONWOOD	MARSHALL	STEELE
CROW WING	MARTIN	STEVENS
DODGE	MCLEOD	SWIFT
DOUGLAS	MEEKER	TODD
FARIBAULT	MILLE LACS	TRAVERSE
FILLMORE	MORRISON	WABASHA
FREEBORN	MOWER	WADENA
GOODHUE	MURRAY	WASECA
GRANT	NICOLLET	WATONWAN
HUBBARD	NOBLES	WILKIN
ITASCA	NORMAN	WINONA
JACKSON	OTTER TAIL	YELLOW MEDICINE

HEAVY CONSTRUCTION PROJECTS (Does not include Water & Sewer Line or Treatment Plants)

Modification Number	Publication Date
0	02/11/2000
1	03/10/2000
2	05/05/2000
3	05/19/2000
4	06/02/2000
5	07/07/2000
6	07/28/2000

COUNTY(ies):

AITKIN	KANABEC	PENNINGTON
BECKER	KANDIYOHI	PINE
BELTRAMI	KITTSOIN	PIPESTONE
BIG STONE	KOOCHICHING	POPE
BLUE EARTH	LAC QUI PARLE	RED LAKE
BROWN	LAKE	REDWOOD
CARLTON	LAKE OF THE WOODS	RENVILLE
CASS	LE SUEUR	RICE
CHIPPEWA	LINCOLN	ROCK
CLEARWATER	LYON	ROSEAU
COOK	MAHNOMEN	SIBLEY
COTTONWOOD	MARSHALL	STEELE
CROW WING	MARTIN	STEVENS
DODGE	MCLEOD	SWIFT
DOUGLAS	MEEKER	TODD

FARIBAULT	MILLE LACS	TRAVERSE
FILLMORE	MORRISON	WABASHA
FREEBORN	MOWER	WADENA
GOODHUE	MURRAY	WASECA
GRANT	NICOLLET	WATONWAN
HUBBARD	NOBLES	WILKIN
ITASCA	NORMAN	WINONA
JACKSON	OTTER TAIL	YELLOW MEDICINE
ELEC0110J	05/01/1999	

	Rates	Fringes
GOODHUE (West of Belle Creek, Minneola, Roscoe & Vasa Townships), KANABEC (South of Hillman, Peace & Pomroy Townships), LE SUEUR (East of Cleveland, Sharon, Tyrone & Washington Townships), MILLE LACS (South of Bradbury, Lewis & Onamia Townships), PINE (South of Arione, Barry, Clover, Hinckley & Ogema Townships) & RICE COUNTIES:		
ELECTRICIANS	24.71	10.69
CABLE SPLICERS	25.71	10.69

 ELEC0242F 06/01/2000

	Rates	Fringes
AITKIN, CARLTON, CASS (Bounded on the north by the south line of Leech Lake, Minnesota Island, Could, Bay River & Salem Townships), COOK, CROW WING, HUBBARD (Except Rockwood, Helga, Farden, Lake Hattie, Schoolcraft, Guthrie, Hart Lake, Lake Alice, Lake George, Hendrickson & Lakeport), ITASCA (Southerly 12 Townships, including Harris, Feely, Blackberry, Spang, Coodland, Sago & Wawina), KANABEC (Northern part, including Brook, Ford, Krosche, Hillman, Peace & Pomroy Townships), LAKE, MILLE LACS (Including Northerly Townships of Kathio, South Harbor, Isle, East Side, Onamia & Harbor), MORRISON, PINE (Excluding southerly Townships of Brook Park, Mission Creek, Munch, Crosby, Pokegama, Cross Lake, Chengwatana, Royalton, Rock Creek & Pine City), TODD & WADENA COUNTIES:		
ELECTRICIANS	27.76	9.16

 ELEC0292I 05/31/1999

	Rates	Fringes
BIG STONE, CHIPPEWA, KANDIYOHI, LAC QUI PARLE, MCLEOD, MEEKER, POPE, STEVENS & SWIFT COUNTIES:		
ELECTRICAL INSTALLATIONS OVER \$300,000.00:		
ELECTRICIANS	22.95	9.36
CABLE SPLICERS	23.95	9.39
ELECTRICAL INSTALLATIONS UNDER \$300,000.00:		
ELECTRICIANS	20.00	8.55
CABLE SPLICERS	21.00	8.58

 ELEC0294H 06/01/1999

	Rates	Fringes
CASS (Northern part, bounded on the south by a line extending east & west of the south line of Boy River & Salem Townships), HUBBARD (Northern part, bounded on the south by a line extending east & west of the south line of Lake Alice & Lake George Townships) & KOOCHICHING COUNTIES:		
ELECTRICIANS	23.70	9.12
CABLE SPLICERS	24.25	9.34

 ELEC0294K 02/01/2000

	Rates	Fringes
BELTRAMI, CLEARWATER , ITASCA (Excluding the section south of a line extending east & west of the south line of Grand Rapids & Trout Lake Townships) & LAKE OF THE WOODS (Excluding the northwest angle) COUNTIES:		
ELECTRICIANS:		

Electrical Installations Under \$3,000,000.00	20.05	7.08
All Other Work:		
Electricians	23.70	9.12
Cable Splicers	24.25	9.34

ELEC0343L 05/31/1999

	Rates	Fringes
BLUE EARTH, BROWN, COTTONWOOD, DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE (Except that portion west of Belle Creek, Minneola, Roscoe & Vasa Townships), JACKSON, LE SUEUR (Cleveland, Le Sueur, Ottawa, Sharon, Tyrone, Washington & Kasota Townships), LINCOLN, LYON, MARTIN, MOWER, NICOLLET, REDWOOD, RENVILLE, SIBLEY, STEELE, WABASHA, WASECA, WATONWAN, WINONA & YELLOW MEDICINE COUNTIES:		
ELECTRICAL INSTALLATIONS OVER \$300,000.00:		
ELECTRICIANS	22.99	9.12
CABLE SPLICERS	23.99	9.26
ELECTRICAL INSTALLATIONS UNDER \$300,000.00:		
ELECTRICIANS	20.24	8.75
CABLE SPLICERS	21.24	8.89

ELEC0426E 06/01/1999

	Rates	Fringes
MURRAY, NOBLES, PIPESTONE & ROCK COUNTIES: 0 TO 10 MILES FROM THE CITIES OF ABERDEEN & WATERTOWN, SOUTH DAKOTA; & WORTHINGTON, MINNESOTA ; AND 0 TO 70 MILES FROM SIOUX FALLS, SOUTH DAKOTA:		
ELECTRICIANS	19.00	6.105
CABLE SPLICERS	20.90	6.34
BEYOND THE AFOREMENTIONED AREAS:		
ELECTRICIANS	21.40	6.405
CABLE SPLICERS	23.54	6.67

ELEC1426I 06/01/1998

	Rates	Fringes
BECKER, DOUGLAS, GRANT, KITTSON, MAHNOMEN, MARSHALL, NORMAN, OTTER TAIL, PENNINGTON, RED LAKE, ROSEAU, TRAVERSE & WILKIN COUNTIES:		
ELECTRICIANS	14.70	4.64
CABLE SPLICERS	15.45	4.73

ENGI0049W 05/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS: AITKIN, BLUE EARTH, CARLTON, CASS (South of the northern right- of-way of U.S. Hwy #2 & east of the western right-of-way of U.S. Hwy #371), CROW WING (East of the western right-of-way of U.S. Hwy #371), DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, ITASCA (East of the western right-of-way of Minnesota Hwy #6), KANABEC, KOOCHICHING (East of a north-south line from the Canadian border to Pelland, the western right-of-way of U.S. Hwy #71 from Pelland to Big Falls & Minnesota Hwy #6), LE SUEUR, MILLE LACS, MORRISON (East of the western right-of-way of U.S. Hwy #371 & U.S. Hwy #10 from Little Falls to the Morrison-Benton County line), MOWER, PINE, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES; & BROWN, MCLEOD, MARTIN, MEEKER, NICOLLET, SIBLEY & WATONWAN COUNTIES (East of the western right-of-way of Minnesota Hwy #15):		
GROUP 1	22.76	7.15
GROUP 2	22.31	7.15
GROUP 3	22.14	7.15
GROUP 4	22.01	7.15
GROUP 5	19.44	7.15

GROUP 6 18.57 7.15
 BECKER, BELTRAMI, BIG STONE, CASS (Excluding area south of the northern right-of-way of U.S. Hwy #2 & east of the western right-of-way of U.S. Hwy #371), CHIPPEWA, **CLEARWATER**, COTTONWOOD, CROW WING (E of-way of U.S. Hwy #371), DOUGLAS, GRANT, HUBBARD, ITASCA (Excluding area east of the western right-of-way of **Minnesota** Hwy #6), JACKSON area east of a north-south line from the Canadian border to Pelland, the western right-of-way of U.S. Hwy #71 from Pelland to Big Falls & **Minnesota** Hwy #6), LAC QUI PARLE, LAKE OF THE WOODS, LINCOLN, LYON, MAHNOMEN, MARSHALL, MORRISON (Excluding area east of the western right-of-way of U.S. Hwy #371 & U.S. Hwy #10 from Little Falls to the Morrison-Benton County line), MURRAY, NOBLES, NORMAN, OTTER TAIL, PENNINGTON, PIPESTONE, POPE, RED LAKE, REDWOOD, RENVILLE, ROCK, ROSEAU, STEVENS, SWIFT, TODD, TRAVERSE, WADENA, WILKIN & YELLOW MEDICINE COUNTIES; & BROWN, MCLEOD, MARTIN, MEEKER, NICOLLET, SIBLEY & WATONWAN COUNTIES (Excluding the area east of the western right-of-way of **Minnesota** Hwy #15):

GROUP 1	20.75	7.15
GROUP 2	19.82	7.15
GROUP 3	19.62	7.15
GROUP 4	19.51	7.15
GROUP 5	17.80	7.15
GROUP 6	17.20	7.15

COOK & LAKE COUNTIES:

GROUP 1	24.37	7.15
GROUP 2	23.82	7.15
GROUP 3	23.64	7.15
GROUP 4	23.52	7.15
GROUP 5	20.48	7.15
GROUP 6	19.27	7.15

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - *Crane with over 135' Boom, excluding Jib; & Hydraulic Backhoe and/or other similar equipment with Shovel-type Controls 3 cu. yds. & over Mfg. rated Cap.

GROUP 2 - Hydraulic Backhoe and/or similar equipment with Shovel-type Controls, up to 3 cu. yds. Mfg. rated cap.; Front End Loader, 5 cu. yds. & over; Locomotive Crane; Master Mechanic; Tandem Scraper; Tractor - Boom type; & Truck Crane - Crawler Crane

GROUP 3 - Dual Tractor; & Scraper - Struck Cap. 32 cu. yds. & over

GROUP 4 - Bituminous Roller (8 Tons & over); Cat Tractor with Rock Wagon or similar type; Front End Loader, over 1 cu. yd.; Mechanic; Rubber-tired Farm Tractor, Backhoe Attach.; Scraper, up to 32 cu. yds.; Skid Steer Loader, over 1 cu. yd. with Backhoe Attachment; Tractor, Bulldozer; Tractor Operator, over 50 HP with Power Take-off; & Dismantling or Repair Mechanic

GROUP 5 - Bituminous Roller (Under 8 tons); Bituminous Rubber-tired Roller; Front End Loader, up to & incl. 1 cu. yd.; Loader (Barber Greene or similar type); & Tractor Operator, Bulldozer, 50 HP or less

GROUP 6 - Mechanic Tender; Mechanic, Space Heater (Temporary Heat); Roller on Gravel Compaction; Sheep Foot Roller; Tractor, Wheel type (over 50 HP); & Truck Crane Oiler

CRANE OVER 135' BOOM, EXCLUDING JIB - \$.25 PREMIUM;

CRANE OVER 200' BOOM, EXCLUDING JIB - \$.50 PREMIUM

UNDERGROUND WORK:

TUNNELS, SHAFTS, ETC. - \$.25 PREMIUM

UNDER AIR PRESSURE - \$.50 PREMIUM

HAZARDOUS WASTE PROJECTS (PPE Required):

LEVEL A - \$1.25 PREMIUM

LEVEL B - \$.90 PREMIUM

LEVEL C - \$.60 PREMIUM

 IRON0184D 05/01/2000

	Rates	Fringes
JACKSON, LINCOLN, MARTIN, MURRAY, NOBLES, PIPESTONE & ROCK COUNTIES:		
IRONWORKERS	17.46	5.415

IRON0512L 05/01/2000

	Rates	Fringes
BIG STONE, BLUE EARTH, BROWN, CHIPPEWA, COTTONWOOD, DODGE, DOUGLAS, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, GRANT, KANABEC, KANDIYOHI, LAC QUI PARLE, LE SUEUR, LYON, MCLEOD, MEEKER, MILLE LACS, MORRISON, MOWER, NICOLLET, OTTER TAIL, POPE, REDWOOD, RENVILLE, RICE, SIBLEY, STEELE, STEVENS, SWIFT, TODD, TRAVERSE, WABASHA, WADENA, WASECA, WATONWAN, WINONA & YELLOW MEDICINE COUNTIES:		
IRONWORKERS	27.15	9.94

IRON0563K 05/01/2000

	Rates	Fringes
AITKIN, BECKER, BELTRAMI, CARLTON, CASS, CLEARWATER , COOK, CROW WING, HUBBARD, ITASCA, KOOCHICHING, LAKE, LAKE OF THE WOODS, MAHNOMEN, PENNINGTON, PINE, RED LAKE & ROSEAU COUNTIES:		
IRONWORKERS	22.13	11.35

IRON0793E 05/01/2000

	Rates	Fringes
KITTSO, MARSHALL, NORMAN & WILKIN COUNTIES:		
IRONWORKERS	18.00	8.37

* LABO9900N 05/01/2000

	Rates	Fringes
AITKIN, BECKER, BELTRAMI, BIG STONE, CASS, CHIPPEWA, CLEARWATER , COTTONWOOD, CR KANDIYOHI, KITTSO, KOOCHICHING, LAC QUI PARLE, LAKE OF THE WOODS, LINCOLN, LYON, MAHNOMEN, MARSHALL, MARTIN, MCLEOD, MEEKER, MORRISON, MURRAY, NOBLES, NORMAN, OTTER TAIL, PENNINGTON, PIPESTONE, POPE, RED LAKE, REDWOOD, RENVILLE, ROCK, ROSEAU, SIBLEY, STEVENS, SWIFT, TODD, TRAVERSE, WADENA, WATONWAN, WILKIN & YELLOW MEDICINE COUNTIES:		
LABORERS:		
Pipelayer	15.34	4.61
Tunnel	15.04	4.61
Flagger	12.34	4.56
BLUE EARTH, BROWN, DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, LE SUEUR, MOWER, NICOLLET, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES:		
LABORERS:		
Pipelayer	18.94	5.21
Tunnel	18.64	5.21
Flagger	15.04	5.01
CARLTON, COOK & LAKE COUNTIES:		
LABORERS:		
Pipelayer	20.87	5.56
Tunnel	20.57	5.56
Flagger	16.32	5.31
ITASCA COUNTY:		
LABORERS:		
Pipelayer	20.47	5.96
Tunnel	20.17	5.96
Flagger	16.32	5.31
KANABEC & MILLE LACS COUNTIES:		
LABORERS:		
Pipelayer	17.79	5.31
Tunnel	17.49	5.31

Flagger	13.89	5.11
PINE COUNTY:		
LABORERS:		
Pipelayer	21.74	5.56
Tunnel	21.44	5.56
Flagger	17.04	5.31

PLUM0006D 08/01/1999

	Rates	Fringes
DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE (Southern half), MOWER, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES:		
PIPEFITTERS:		
Mechanical Contracts Up to \$75,000.00	21.17	7.30
All Other Mechanical Contracts	26.46	7.30

PLUM0011G 05/01/2000

	Rates	Fringes
CARLTON, COOK (A strip 20 miles inland along the shores of Lake Superior), KANABEC, LAKE (A strip 20 miles inland along the shores of Lake Superior) & PINE COUNTIES:		
PIPEFITTERS	24.40	9.20

PLUM0126D 05/15/2000

	Rates	Fringes
AITKIN, BECKER, BELTRAMI, CASS (Southern half), CLEARWATER , CROW WING, DOUGLAS, MAHNOMEN, MARSHALL, NORMAN, OTTER TAIL, PENNINGTON, RED LAKE, ROSEAU, TRAVERSE, WADENA & WILKIN COUNTIES:		
PIPEFITTERS:		
Total Mechanical Projects up to \$2,000,000.00, excluding Sheet Metal, Fire Protection & Pipe Insulation	23.72	7.78
Total Mechanical Projects of \$2,000,000.00 & Above, excluding Sheet Metal, Fire Protection & Pipe Insulation	26.12	7.78

PLUM0455E 05/01/2000

	Rates	Fringes
GOODHUE COUNTY (Northern half):		
PIPEFITTERS	28.43	8.91

PLUM0455K 05/01/1999

	Rates	Fringes
BLUE EARTH, BROWN, COTTONWOOD, JACKSON, LE SUEUR, LINCOLN, LYON, MARTIN, MURRAY, NICOLLET, NOBLES, PIPESTONE, REDWOOD, RENVILLE, ROCK, SIBLEY & WATONWAN COUNTIES:		
PIPEFITTERS	22.49	7.81

PLUM0539F 05/01/2000

	Rates	Fringes
MCLEOD & MILLE LACS COUNTIES:		
PIPEFITTERS	26.35	11.28

PLUM0539K 05/01/2000

	Rates	Fringes
BIG STONE, CHIPPEWA, KANDIYOHI, LAC QUI PARLE, MEEKER, MORRISON, POPE, STEVENS, SWIFT, TODD & YELLOW MEDICINE COUNTIES:		
PIPEFITTERS	22.04	11.83

PLUM0589D 06/01/2000

	Rates	Fringes
CASS (North of a parallel line drawn from the northern boundary		

of Crow Wing County, west to the east boundary of Wadena County), COOK (Except a strip 20 miles inland along the shores of Lake Superior), ITASCA & LAKE (Except a strip 20 miles inland along the shores of Lake Superior) COUNTIES:

PIPEFITTERS	22.04	10.97
KOOCHICHING COUNTY:		
PIPEFITTERS	23.29	10.97

SUMN2001B 07/08/1994

	Rates	Fringes
CARPENTERS	13.73	2.55
LABORERS:		
Unskilled	12.33	3.18
Landscape Work	5.15	
PAINTERS, Steel	19.42	4.72
POWER EQUIPMENT OPERATORS:		
Dragline	13.41	3.95
Grader	12.03	2.84

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

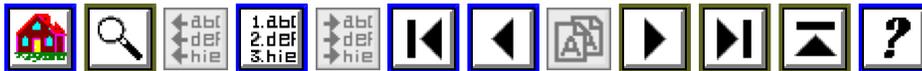
Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION



ATTACHMENT NO. 2

MATERIAL SOURCES

Stone material for riprap meeting the contract requirements can be produced from the following sources.

SOURCE	OPERATOR
Southerland Quarry NW 1/4, SW 1/4, Sect. 6 T 162 N, R 34 W Lake of the Woods County, MN	Bradshaw Gravel Supply Box 13500 Grand Forks, ND
Petters Quarry S 1/2, Sect. 18 T 124 N, R 28 W Sterns County, MN	Meridian Aggregate Co. Box 69 St. Cloud, MN

RED LAKE CONTROL STRUCTURE

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- 1.3 SUBMITTALS
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RED LAKE CONTROL STRUCTURE

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RED LAKE CONTROL STRUCTURE

SECTION 01000

GENERAL

PART 1 GENERAL

1.1 ORGANIZATION OF SPECIFICATIONS

The specifications which govern the materials and equipment to be furnished and the work to be performed under this contract are listed in the Table of Contents. No attempt has been made in the specifications to segregate work to be performed by any trade, craft, or subcontractor. Any segregation between the trades or crafts shall be solely a matter for agreement between the Contractor, Contractor's employees, and subcontractors.

1.2 REFERENCES

Reference to the standards, specifications, or codes of any technical society, organization, or association, or local, state, or Federal authority shall mean the specific edition or revision listed. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO (1996) Edition 16, Standard Specifications
For Highway Bridges

CORPS OF ENGINEERS ENGINEERING MANUALS (COE EM)

COE EM 1110-2-2503 Design of Sheet Pile Cellular Structures
Cofferdams & Retaining Structures

COE EM 1110-2-2504 Design of Sheet Pile Walls

COE EM 1110-2-1902 Stability of Earth and Rockfill Dams

COE EM 1110-2-2300 Earth & Rockfill Dams General Design &
Construction Considerations

1.3 SUBMITTALS

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

SD-04 Drawings

RED LAKE CONTROL STRUCTURE

Utility As-Builts; FIO.

The Utility As-Builts are described under PARAGRAPH: SURVEYS.

SD-08 Statements

Groundwater Dewatering plan; FIO.

The submittal requirements are described in PARAGRAPH: GROUNDWATER DEWATERING OPERATIONS.

Structure Dewatering Plan of Operations; GA.

The submittal requirements are described in PARAGRAPH: STRUCTURE DEWATERING OPERATIONS.

Shoring plan; FIO.

The submittal requirements are described in PARAGRAPH: SHORING.

Residence Access Plan; FIO.

The Contractor shall submit a plan for maintaining access to the residence located near the work area. The plan shall include a sketch of the plan features, a schedule of the time period where the plan will be implemented, and a brief description of the work.

1.4 MEASUREMENT AND PAYMENT

1.4.1 Structure Dewatering

All work associated with dewatering the structure, including the design and layout of the cofferdams and dewatering equipment, construction and removal of cofferdams, the set up and operation and take down of dewatering equipment, and all materials, equipment and labor necessary for the dewatering of the structure will not be measured for separate payment and will be paid for on a lump sum basis.

1.4.2 Remaining Work of this Section

The Contractor shall be responsible for the remaining work of this section, including the groundwater dewatering of any excavations, without any direct compensation being made other than the payment received for contract line items on the bidding schedule.

PART 2 PRODUCTS

2.1 APPROVAL OF MATERIALS OR ALTERNATES

Requests for approval of materials and products, or substitutes thereof, will not be considered prior to award of the contract.

2.2 WARRANTIES

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Any items that are submitted for review or approval of the Contracting officer should include a copy of the manufacturer's standard warranty if one is available.

PART 3 EXECUTION

3.1 GROUND AND ROADWAYS

3.1.1 Availability of Grounds

The boundary limits of the grounds made available for the Contractor's use during the life of the contract are shown on the drawings. Any additional rights-of-way or grounds desired by the Contractor shall be obtained by the Contractor at its own expense, and copies of agreements for the use of such rights-of-way shall be furnished to the Contracting Officer before entering thereon. Such agreements shall clearly relieve the Government of any responsibility for damages resulting from the use of the grounds.

3.1.1.1 Additional Grounds

Additional grounds may be available for parking of trailers and vehicles located on the left bank (looking downstream) and upstream of the control structure. If the Contractor wants to use this area, the Contractor shall contact and make arrangements with:

Dave Connor
Red Lake Band of Chippewa Indians
Department of Natural Resources
Red Lake, Minnesota
218-679-3959

3.1.2 Drainage Facilities

Insofar as natural drainage from the protected areas is obstructed by contract operations, it shall be the Contractor's responsibility to make adequate provision for accommodating such drainage in a satisfactory manner during the life of this contract, either by temporary means or by use of the permanent construction and operation of the permanent facilities.

3.1.3 Roadways

3.1.3.1 Traffic hazards

When continuous haul operations or other condition created by the Contractor's operations result in interference or hazard to traffic on streets and highways, beyond that of ordinary public usage, the Contractor shall erect warning signs and provide flagging services as necessary to safeguard the public as required in SECTION 01500: TEMPORARY CONSTRUCTION FACILITIES. This includes the signage necessary to temporarily close the roadway over the structure and detour the traffic.

3.1.3.2 Haul routes

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The Contractor shall be responsible for securing all permits required along haul routes. The Contractor shall be the sole permittee and shall be responsible for meeting all obligations of the permits. A copy of each permit shall be submitted to the Contracting Officer. The Contractor, as between the Government and the Contractor, has sole responsibility for damage or deterioration of the Contractor's haul routes. Dust control shall be provided as stated in SECTION 01410: ENVIRONMENT PROTECTION.

3.2 DISPOSAL OF DEBRIS AND WASTE

The Contractor's attention is directed to SECTION 01410: ENVIRONMENT PROTECTION and to the following CONTRACT CLAUSES: PERMITS AND RESPONSIBILITIES; PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, EQUIPMENT, AND IMPROVEMENTS; OPERATIONS AND STORAGE AREAS; and CLEANING UP. Burning will not be permitted at the project site and debris or waste shall not be left on the site. Disposal of clearing and grubbing debris shall be by one of the following methods:

3.2.1 Disposal offsite for useful purposes

In the interest of conservation, it is required that the Contractor make a reasonable effort to dispose of the material offsite for some useful purpose. Timber may be cut into convenient lengths and utilized for making saw logs, posts, cordwood, wood chips for papermaking or other uses, or other similar use.

3.2.2 Disposal in a locally operated sanitary landfill

Contractor shall select the disposal site with the approval of the Contracting Officer. The Contractor shall secure the required permits for disposal and provide copies of the permit to the Contracting Officer.

3.2.3 Disposal of Solid Construction Debris and Waste

Disposal of Solid Construction Debris and Waste shall consist of removal from Government property and disposal in compliance with Federal, state, and local requirements for solid waste disposal. Contractor shall select the disposal site with the approval of the Contracting Officer.

3.3 EXISTING UTILITIES

3.3.1 General

The Contractor shall coordinate all utility relocation requirements and make payment to the utility companies for all services, fees, and permits required to relocate and reestablish service. The Contractor shall be responsible for all costs related to protecting existing utilities. The Contractor shall coordinate with the utility representatives listed below:

3.3.2 Buried Utilities

The approximate locations of known existing buried utilities are shown on the drawings to the extent of available information at the time the

RED LAKE CONTROL STRUCTURE

drawings were prepared. (In general, no service connections are shown.) Prior to commencing excavation, the Contractor shall accurately locate all such installations. In the event the Contractor damages any existing utility lines, report thereof shall be made immediately to the Contracting Officer. If the Contracting Officer determines that repairs shall be made by the Contractor, such repairs shall be performed immediately.

3.3.3 Interruption of Services

Utility services shall not be interrupted except for brief periods to facilitate cut-ins. The Contractor shall provide temporary service and shall relocate existing utilities as required to construct the work shown and insure uninterrupted service. If interruption of services is unavoidable, the Contractor shall request approval in writing at least 30 calendar days prior to the proposed interruption. This submittal shall fully describe all details of proposed interruption and the reasons why alternatives are not feasible. The Contractor shall further coordinate with the owner of the utility and notify affected consumers at least 10 calendar days in advance of interruption of services. The Contracting Officer will not in general approve proposals which require interruption of services for more than 4 continuous hours.

3.3.4 Minnesota One Call Excavation Notice System

For contract work performed within the State of Minnesota, the Contractor shall meet the requirements of Minnesota Statutes, Chapter 216D "One Call Excavation Notice System." The Gopher State One Call notification center telephone numbers are:

Metro area	(612) 454-0002
Outstate	(800) 252-1166

3.4 SCHEDULING

3.4.1 General

It shall be the responsibility of the Contractor to schedule and execute the work, incorporating the necessary requirements set forth in these specifications. The Contractor shall develop and submit a schedule in accordance with SECTION 00700 CONTRACT CLAUSES: SCHEDULES FOR CONSTRUCTION CONTRACTS.

3.4.2 Notification

The Contractor shall inform the Government in writing within 5 days after receipt of notice to proceed and before work begins as to which hours of the day and days of the week work under this contract will be performed. The Contractor shall notify the Government at least 24 hours before work is to be conducted on overtime, in multiple shifts, on weekends, or on Federal Government holidays.

3.5 CONSTRUCTION RESTRICTIONS

3.5.1 Blasting

RED LAKE CONTROL STRUCTURE

Blasting will not be permitted.

3.5.2 Bridge Load Limits

The Contractor shall subject the bridge to no loads greater than HS10 as defined in AASHTO. Other load configurations must be submitted for approval if the total load is greater than 18 tons or if the wheel spacings are unusually close.

3.5.3 Bridge Closed

The bridge over the dam is closed to public traffic. The Contractor is allowed to remove the barricades and use the bridge for access within the restrictions noted above. However, the Contractor must keep the bridge closed to public traffic at all times.

3.5.4 Access to Residence

There is an access to a residence near the work area. Excavation for the anchors may interfere with the access. The Contractor shall develop and implement a plan to maintain access to the residence at all times. The features of the plan shall be in compliance with all required permits and regulations and with these specifications.

3.5.5 Pile Driving Operations

The hours of pile driving operations are limited to the hours between 7:00 AM and 7:00 PM.

3.6 CULTURAL RESOURCES

To the maximum extent possible the Contractor is required to work with the Red Lake Reservation, archaeologist to conduct excavation monitoring for all excavation areas considered by Red Lake to be archaeologically, or culturally, sensitive. The Red Lake archaeologist will have a set of plans and specifications for their review before the award of the contract. Contact the Contracting Officer to obtain the name and phone number of the Red Lake archaeologist.

Within one week after award of the contract, and at least two weeks prior to the beginning of construction, the Contractor will contact the archaeologist at Red Lake Engineering to determine which portion of the project will need to be monitored and to coordinate the project schedule with the archaeologist.

If during the monitoring important cultural resources are identified by the archaeologist, the Contractor will stop work in that and adjacent areas as directed by the archaeologist. At that time the Contractor will also notify the Contracting Officer. Construction may not proceed in that area until notified by the Contracting Officer.

The Contractor shall develop a plan in consultation with the Red Lake archaeologist to facilitate continuation of the construction project in

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the event of discovery and a need for evaluation of cultural resources.

3.7 OTHER CONTRACTS

The Contractor shall coordinate with other contractors in the performance of the work and schedule such work to provide for a minimum of delays and interferences. Coordination shall be through the Contracting Officer. Work listed below is currently required under separate contract or is scheduled to be awarded as a separate contract prior to completion of work under this contract. These contracts will be considered in the application of CONTRACT CLAUSE: OTHER CONTRACTS.

3.8 SHORING AND BRACING

3.8.1 General

At locations where shoring is not specifically required by the contract documents to safeguard adjacent structures, the Contractor may at its own option employ shoring for protecting work areas within excavations in lieu of performing excavation to safe and stable side slopes. The Contractor shall construct all shoring required in performing the excavations. Shoring shall be constructed in accordance with the safety requirements of EM 385-1-1.

3.8.1.1 Specific Requirements

Shoring and/or bracing shall be required to support the concrete working platform during concrete repair of the left abutment upstream wingwall/abutment/platform repair. Bracing shall be provided to support the upstream wingwalls prior to any excavation in the channel. The upstream wingwalls shall be monitored during the unwatering of the cofferdam. If any movement of the wall occurs the cofferdam shall be refilled with water and the Contracting Officer shall be notified. Bracing shall be provided to support the concrete core wall during the excavation behind the abutments.

3.8.2 Responsibility

The Contractor shall be responsible for design and maintenance of all shoring and bracing which the Contractor proposes to install. Plans and design computations for all shoring used shall be submitted in accordance with SECTION 01330: SUBMITTAL PROCEDURES at least 30 days prior to installation. Design of shoring/bracing shall be done by a registered engineer.

3.8.3 Removal

Unless otherwise authorized, all sheeting and bracing shall be removed when backfill is completed.

3.9 GROUNDWATER DEWATERING OPERATIONS

3.9.1 Scope

The Contractor shall design, furnish, install and operate dewatering

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systems in conjunction with associated cofferdams, shoring, and other related work. Surface drainage shall be controlled by rerouting storm water runoff or diverting natural drainage, as necessary.

3.9.2 Requirements

Control of groundwater shall be accomplished in a manner that will provide suitable working conditions for construction, preserve the strength of the foundation soils, will not cause instability of excavations, and will not result in damage to existing structures. Suitable working conditions for construction will provide a dry or moist subgrade free of standing, percolating, or running water during placement and curing of concrete, and placement and compaction of backfill. For structure foundations, the water level (as measured in piezometers) shall be maintained a minimum of 1 foot below the prevailing excavation level, or it shall be lowered to within 2 feet of impermeable stratigraphy.

3.9.2.1 Design

If conditions warrant, and if not otherwise specified in the contract documents, dewatering may consist of collection in sumps or trenches, and open pumping. Sumps, trenches and running water shall not jeopardize erosion or groundloss near foundations, pipes, or other structures. Open pumping will not be permitted if it results in boils, seepage in concrete placement areas, loss of fines, softening of the ground, instability of slopes, or interference with orderly progress of the construction.

3.9.2.2 Regulations

Compliance with all regulations shall be incidental to the dewatering work. Disposal of water shall be in accordance with SECTION 01410: ENVIRONMENT PROTECTION and all applicable regulations.

3.9.2.3 Operation

Upon installation and commencement of dewatering operations, the system shall be operated continuously (24 hours/day, 7 days/week) until the structure and backfill are completed to the groundwater elevation. The Contractor shall be responsible for maintaining the system.

3.9.2.4 Removal

Upon completion of the work all equipment shall be removed (including related temporary cofferdams, shoring, etc.)

3.9.3 Geologic Information

Ground water elevations shown on the boring logs are those encountered at the time the borings were taken. Because groundwater elevations are dependent upon hydrologic conditions, variations in the water table should be expected. For work near rivers and navigable waterways, refer to the hydrographs included with the contract drawings. It shall be the Contractor's responsibility to perform the necessary dewatering operations irrespective of the water elevations at the time of the work. However,

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nothing in this clause prohibits the contractor from receiving a time extension under the Default clause, the Time Extensions for Unusually Severe Weather clause, or any other clause in this contract.

3.9.4 Dewatering Plan

A dewatering plan shall be submitted for each area or phase of the contract. The plan shall include the following items:

1. layout (including the relationship to site improvements and construction operations)
2. number and capacity of pumps
3. description of operating procedures
4. description of discharge point (weirs, sedimentation basin, etc.)
5. type and location of monitoring equipment

3.9.5 Liability

Government review of the proposed dewatering system will not relieve the Contractor of full responsibility for the adequacy of the dewatering operations. The Contractor shall be responsible for dewatering effects on adjacent properties, including but not limited to blockage of easements, erosion or sedimentation of ditches, and encroachment onto private property by flooding from pump outlets and sedimentation basins.

3.8.8 Related Work

Shoring, trench support systems, cofferdams and diversion structures shall be coordinated with the dewatering effort to provide safe and reliable conditions.

3.10 STRUCTURE DEWATERING OPERATIONS

3.10.1 Scope

The Contractor shall design, construct and maintain cofferdams and pumping to dewater the structure in order to facilitate the construction and inspection as indicated on the drawings and in these specifications and as approved.

3.10.2 Requirements

The control structure and the existing road embankment are part of the dam that contains Red Lake. The upstream cofferdam(s) shall be installed prior to any excavation in the existing roadway behind the control structure abutment(s) and shall function as a portion of the dam. The area between the upstream cofferdam and downstream cofferdam shall be dewatered such that there is no standing water at or above the elevation of the work. This will require dewatering the excavation adjacent to the upstream wingwalls to the elevation of the wingwall footing (elevation 1165.6) for the purpose of inspecting and repairing the cracks in the wingwall.

3.10.3 Design

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The cofferdams shall be designed and laid out by a registered engineer in the state of Minnesota, at the Contractor's expense, and shall be submitted to the Contracting Officer for review and approval. The submittal shall include calculations demonstrating adequate strength and stability, a plan showing the layout of the features and how the cofferdam will affect the work, and enough sections and details to define the work, a schedule of the work and installation plan, and a plan for the protection of the completed work in the event that the pool exceeds elevation 1177.0 and the Contractor is directed to remove the cofferdam. This submittal shall be part of the plan of operations for dewatering. Design of sheetpile structures shall comply with the requirements of COE EM 1110-2-2503 and COE EM 1110-2-2504. Design of earthen cofferdams shall comply with the requirements of COE EM 1110-2-1902 and COE EM 1110-2-2300.

3.10.4 Restrictions

The Contractor's cofferdam plan and requests for changes to the discharge through the dam shall be limited by the following restrictions:

3.10.4.1 Blocking Bays

No more than two bays shall be blocked by the cofferdams at any given time. Bay 4 shall not be included in the first set of bays to be blocked so that Bay 4 is available to control the discharge through the dam with stoplogs.

3.10.4.2 Discharge

Discharges through the dam will reflect normal operations with the following exceptions:

- a. Discharge shall be reduced to not less than 25 cfs for no more than ten consecutive days for the purpose of cofferdam installation and for the purpose of cofferdam removal. (Ten consecutive days for cofferdam installation and ten consecutive days for cofferdam removal)
- b. Within the 10 consecutive day periods noted above, the discharge through the dam shall be reduced to as little as 0 cfs for not more than 4 consecutive hours within a 24 hour period in order to further facilitate cofferdam construction and removal.
- c. If the Government is unable to allow the discharge conditions noted above, the contract will be modified in accordance with the contract clause: CHANGES.

3.10.4.3 Emergency Cofferdam Removal

If it is anticipated that the pool elevation will exceed elevation 1177.0, a portion of the cofferdams will need to be removed so that all 4 bays are available for discharge. The Contractor will be given two weeks prior notice to remove the cofferdam. If this happens, the contract will be modified in accordance with the contract clause: CHANGES.

3.10.5 Dam Operation

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Changes to gate and stoplog settings for the purpose of water control will be accomplished by the Contractor, as directed by the Contracting Officer. The Contractor shall notify the Contracting Officer 24 hours in advance of requested changes to the gate and stoplog settings for the purposes of water control and shall make only those changes as directed. Changes to gate and stoplog settings for the purpose of water control will be made only during normal working hours and only as directed by the Contracting Officer.

3.10.6 Upstream Cofferdam Requirements

3.10.6.1 Cultural Resources

The cofferdam shall be constructed to minimize any disturbance of the area where the remains of the steamboat as shown on drawing number R13-P-40/2.1 are located. If during construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended and the contracting Officer shall be notified immediately.

3.10.6.2 Materials

The cofferdam shall be constructed of steel sheet pile and earth fill as designed by the Contractor, in accordance with all permits and requirements, in the alignment as indicated on the drawings, and in accordance with comments made on the submitted design. The sheet pile section, material, and penetration shall be based on the Contractor's design as submitted.

3.10.6.3 Top Elevation

The cofferdam shall be designed and constructed to provide protection from water ponded to elevation 1177.0 plus at least 1.0 foot of freeboard for a minimum top-of-barrier elevation of 1178.0. The cofferdam shall not exceed the elevation of the top of the dam, elevation 1181.5.

3.10.6.4 Stop Log Removal

During the time when the cofferdam is blocking bay 1 and bay 2, the Contractor may be directed to remove the existing stoplogs in bay 4. If this happens, the Contractor will be paid additional compensation based on the contract clause: CHANGES.

3.10.6.5 Earth Cofferdam

Where an earth cofferdam is to be constructed, the foundation of the cofferdam shall be stripped. The cofferdam shall be constructed with materials meeting the requirements for impervious fill. The cofferdam shall have a minimum of a 10 foot top width with side slopes of 1 vertical on 3 horizontal. The earth cofferdam shall be designed for waves up to two feet in height. As a minimum, side slope protection shall be an 18 inch thick layer of riprap placed on a geotextile fabric. Silt fences and silt

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curtains shall be in place prior to placing any fill in water to protect fill from erosion during placement.

3.10.7 Downstream Cofferdam Requirements

3.10.7.1 Layout

The cofferdam shall be constructed downstream of the bridge on the portion of the spillway slab that is at elevation 1169.6. Earthfill placed in the water will not be allowed. The cofferdam shall be based on the Contractor's design as approved.

3.10.7.2 Top Elevation

The cofferdam shall be designed and constructed to provide protection from water ponded to elevation 1173.5 plus 0.5 feet of freeboard for a top-of-barrier elevation of 1174.0.

3.10.8 Regulations

Compliance with all regulations shall be incidental to the dewatering work. Disposal of water shall be in accordance with SECTION 01410: ENVIRONMENT PROTECTION and all applicable regulations.

3.10.9 Operation

Upon installation and commencement of dewatering operations, the system shall be operated continuously (24 hours/day, 7 days/week) until the structure work is completed. The Contractor shall be responsible for maintaining the system.

3.10.10 Removal

Upon completion of the work, all cofferdams and equipment shall be removed.

3.10.11 Plan of Operations

A plan of operations for dewatering shall be submitted to the Contracting Officer prior to starting dewatering operations. The Contractor shall furnish, install, and operate pumping equipment, earth barriers, sheet pile barriers, or other dewatering facilities as necessary to provide non-submerged dewatered conditions (no standing water). Upon completion of the work requiring dewatered conditions at any given location, all equipment and materials used in the dewatering operations shall be removed.

3.10.12 Liability

Government review of the proposed dewatering system will not relieve the Contractor of full responsibility for the adequacy of the dewatering operations. The Contractor shall be responsible for dewatering effects on adjacent properties, including but not limited to blockage of easements, erosion or sedimentation of ditches, and encroachment onto private property by flooding from pump outlets and sedimentation basins.

3.11 SURVEYS

3.11.1 Field Layout

The Contractor shall layout the work from the Government established bench marks in accordance with Contract clause LAYOUT OF WORK in Section 00800. The construction of each feature of work shall follow the alignments as indicated on the drawings. The Contractor shall have in place, at least 7 calendar days prior to commencing construction operations, sufficient stakes and markings to enable the Contracting Officer to observe the field layout of the alignment and limits of each feature of work. For each feature of work, these stakes shall define areal limits such that the Contracting Officer can easily determine, without additional surveys, if alignment and/or limit adjustments need to be made. For embankments, levees, floodwalls, and similar work, these stakes shall define centerline, stationing, outermost fill/cut limits, and work limits. For buildings and similar work, the building corners and grid lines shall be staked. General site work shall be staked to define staging areas, storage areas, and other area limits as directed. The Contracting Officer may waive these requirements for certain areas. The layout shall be sufficient for the Contracting Officer to mark trees, vegetation and other features to be left undisturbed. No work shall take place without approval of field layout by the Contracting Officer.

3.11.1.1 Alignment Changes

The Government reserves the right to make changes in the alignment of any feature of work as may be found necessary during the course of the contract. If it becomes necessary, through no fault of the Contractor, to abandon a line, location or feature on which work has been done, an equitable adjustment for completed work will be made. No alignment changes or abandonment shall take place without prior written notice from the Contracting Officer.

3.11.2 Utility As-built.

An as-built field survey of all utilities shall be conducted after installation to determine the final locations and elevations of all utility structures such as manholes, catch basins, hydrants, gate valves, cleanouts, service connections, and other special controls or structures. Final elevations shall be determined for all sewer inverts and castings. Locations shall be shown using the same convention as the original contract drawings (typically stationing and offset from known centerline). If no convention is used in the contract drawings, locations shall be tied to at least 2 permanent landmarks.

3.11.3 Quantity surveys

The Contractor shall perform quantity and tolerance verification surveys for all features of work in accordance with SPECIAL CONTRACT REQUIREMENTS: QUANTITY SURVEYS--ALTERNATE I. Unless changed by the Contracting Officer, the Contractor shall provide cross sections at 50 foot intervals to verify the required section. Areas where payment for material is specified by volume, and/or weight, shall be surveyed by the Contractor, prior to

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commencement of construction of each feature and upon completion of each feature, in enough detail to accurately determine quantities and verify the required section. The Contractor shall also plot each cross section from the survey notes at a scale of 1" = 10' and provide a copy of the survey notes and cross sections to the Contracting Officer within 10 days after completion of the survey.

--End of Section--

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SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows:

SD-01 Data

SD-04 Drawings

SD-06 Instructions

SD-07 Schedules

SD-08 Statements

SD-09 Reports

SD-13 Certificates

SD-14 Samples

SD-18 Records

SD-19 Operation and Maintenance Manuals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Government Approved

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

1.2.2 Information Only

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

1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as

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a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.4 DISAPPROVED SUBMITTALS

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

1.5 WITHHOLDING OF PAYMENT

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

1.6 MEASUREMENT AND PAYMENT

The work of this section will not be measured for payment. The Contractor shall be responsible for the work of this section, without any direct compensation being made other than the payment received for contract items.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples

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remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. If requested, the Contractor will also be given the submittal register as a diskette containing the computerized ENG Form 4288 and instructions on the use of the diskette. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" and "s" through "u" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 7 calendar days after Notice to Proceed. The Contractor shall keep the submittal register up-to-date and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. The submittal register shall provide for a reasonable timely distribution of shop drawings as they are prepared (particularly within a specific discipline, i.e.: structural, mechanical).

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

3.5.1 Submittal Copies

The Contractor shall submit 6 copies of each submittal (both government approved and for information only) unless otherwise indicated. Each transmittal shall address only one submittal item. Transmittals returned for resubmission shall be resubmitted in their entirety. When approved by the Contracting Officer, routine test reports and delivery tickets may be

RED LAKE CONTROL STRUCTURE

submitted with daily quality control reports in place of following submittal procedures under this section.

3.5.2 Schedule

Shop drawings shall be submitted with ample time to secure Government approval prior to the time the items covered thereby are to be delivered to the site. Additional time should be allowed for possible resubmittal. Materials fabricated or delivered without Government approval of the shop drawing will be subject to rejection. All submittals shall be made prior to commencement of applicable work, and allow adequate time for government review acceptable to the Contracting Officer.

3.5.3 Shop Drawings

Shop drawings shall be reproductions on high quality paper with clear legible print. Drawings shall generally be bordered a minimum of one inch and trimmed to neat lines. Shop drawing quality will be subject to approval. Each shop drawing, including catalog data, shall be identified with a title block including the name of the Contractor, contract number, name and location of project, and name of the item of work or structure to which the shop drawing applies. Catalog data, including specifications and full descriptive matter, may be submitted as shop drawings. Catalog data must be supplemented as necessary to include all pertinent data to verify conformance to the contract documents. When catalog data includes non applicable data, the applicable data shall be clearly indicated.

3.5.4 Deviations

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

3.6 CONTROL OF SUBMITTALS

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

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five copies of the submittal will be retained by the Contracting Officer and 1 copy of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals.

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The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

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

CONTRACTOR (Firm Name)
_____ Approved
_____ Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____
TITLE: _____
DATE: _____

3.10 CONTRACTOR RECORD DRAWINGS

The Contractor shall maintain a separate set of marked-up full-scale contract drawings indicating as-built conditions. These drawings shall be maintained in a current condition at all times until completion of the work and shall be available for review by Government personnel at all times. All variations from the contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the contract drawings. Revisions shall be shown on all drawings and details related to the changed feature. These drawings shall be neatly prepared with clear legible print. Deleted items shall be indicated in red and added items or changed

RED LAKE CONTROL STRUCTURE

locations shall be shown in green. These drawings shall be furnished to the Contracting Officer within 30 days after the required contract completion date.

3.10.1 As-Built Shop Drawings

The Contractor shall record changes to shop drawings to indicate as-built conditions. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted.

-- End of Section --

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (<i>Specify</i>) |

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

SUBMITTAL REGISTER
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CONTRACT NO.

TITLE AND LOCATION

CONTRACTOR

SPECIFICATION SECTION

RED LAKE CONTROL STRUCTURE

02220

ACTIVITY NO.	TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL										CLASSIFICATION	CONTRACTOR SCHEDULE DATES				CONTRACTOR ACTION		GOVERNMENT ACTION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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TITLE AND LOCATION

CONTRACTOR

SPECIFICATION SECTION

RED LAKE CONTROL STRUCTURE

05500

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SECTION 01410

ENVIRONMENT PROTECTION

1.1 GENERAL REQUIREMENTS

The Contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

1.1.1 Subcontractors

The Contractor shall insure that its subcontractors comply with the requirements of this section.

1.1.2 Definitions

For the purpose of this specification, environmental pollution and damage 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 human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants.

1.2 SUBMITTALS

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

SD-08 Statements

Environmental Protection Plan; GA.

The environmental protection plan shall be prepared in accordance with Paragraph: Environmental Protection Plan.

1.3 ENVIRONMENTAL PROTECTION PLAN

1.3.1 Implementation.

Prior to ordering required materials/equipment or commencing construction

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work, the Contractor shall:

- a. Submit to the Contracting Officer an acceptable written Environmental Protection Plan;
- b. Obtain the Contracting Officer's written acceptance of the Environmental Protection Plan; and
- c. Meet with representatives of the Contracting Officer for the purpose of developing an understanding of the requirements and methods of administration of the Contractor's Environmental Protection Plan.

1.3.2 Compliance.

Notwithstanding the requirements of this section and notwithstanding approval by the Contracting Officer of the Contractor's Environmental Protection Plan, nothing herein shall be construed as relieving the Contractor from compliance with all applicable Federal, State, and local environmental protection laws and regulations.

1.3.3 Contents.

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

- a. Name(s) of person(s) within the Contractor's on-site organization who is(are) responsible for ensuring that the Environmental Protection Plan is adhered to.
- b. Meeting times and personnel attendance for communication and notification of personnel and subcontractors regarding environmental requirements, and name(s) of person(s) responsible for this training.
- c. The Contractor shall prepare a listing of resources needing protection, (i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, and historical, archaeological, and cultural resources); and what methods will be used to protect these resources.
- d. Name(s) of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- e. Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the environmental protection plan.
- f. Methods and locations for waste disposal. Licenses or permits shall be submitted for solid waste disposal sites that are not an operating commercial facility. Evidence of disposal facility acceptance shall be submitted for any hazardous or toxic waste.

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- g. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
- h. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
- i. Traffic control plans.
- j. Methods of protecting surface and ground water during construction activities.
- k. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.
- l. Drawing of borrow areas.
- m. Plans for restoration of landscape damage.

1.4 PERMITS

The Contractor is responsible for obtaining all applicable permits or licenses (those not obtained by the Government). The Contractor shall be responsible for implementing the terms and requirements of the permits held by the Contractor or the Government. A copy of Permits obtained by the Government related to the work of this contract are available for inspection in the Office of the District Engineer, Army Corps of Engineers Centre, 190 Fifth Street East, St. Paul, Minnesota 55101-1638.

1.5 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action when approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping (suspending) all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions. Failure of the Contracting Officer to notify the Contractor of any noncompliance with Federal, State, or local laws or regulations does not relieve the Contractor of the obligation to be in conformance with those requirements.

1.6 PREVIOUSLY USED EQUIPMENT

The Contractor shall thoroughly clean all construction equipment previously used at other sites before it is brought into the work areas, ensuring that soil residuals are removed and that egg deposits from plant pests are not present; the Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

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1.7 PAYMENT

No separate payment or direct payment will be made for work covered under this section and such work will be considered as a subsidiary obligation of the Contractor.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ENVIRONMENTAL RESOURCES.

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine its activities to areas defined by the drawings and specifications.

3.2 LAND RESOURCES

Prior to the beginning of any construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission from the Contracting Officer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

3.2.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

3.2.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side

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slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

3.2.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
- b. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated or required. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.
- c. Sediment basins. Sediment from construction areas shall be trapped in temporary or permanent sediment basins. The sediment basins shall be constructed in accordance with basin plans when shown on the drawings. The basins shall accommodate the runoff of a local 5 year storm, except that the design storm event required by the watershed district, watershed management board, or similar governing agency shall be used if available. After each storm, the basins shall be pumped dry and accumulated sediment shall be removed to maintain basin effectiveness. Overflow shall be controlled by paved weirs or by vertical overflow pipes. The collected topsoil sediment shall be reused for fill on the construction site, and/or stockpiled for use at another site. The Contractor shall institute effluent quality monitoring programs as required by State and local environmental agencies.

3.2.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

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3.3 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

3.3.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water.

3.3.2 Cofferdam and Diversion Operations

Construction operations for dewatering, water return for hydraulic dredging, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to limit the impact of water turbidity on the habitat for wildlife and on water quality for downstream use. The Contractor shall plan its operations and perform all work necessary to minimize adverse impact or violation of the water quality standards applicable to this contract.

3.3.3 Stream Crossings

Stream crossings shall be controlled during construction. Crossings shall provide movement of materials or equipment which do not violate water pollution control standards of Federal, State, or local governments.

3.3.4 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

3.4 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with State air pollution statutes, rules, and regulations and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring of air quality shall be the Contractor's responsibility. All air areas affected by the construction activities shall be monitored by the Contractor.

3.4.1 Particulates

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Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

3.4.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

3.4.3 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

3.4.4 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall use methods and devices to control noise emitted by equipment to within the levels specified in the "Safety and Health Requirements Manual" referenced in the clause "Accident Prevention" in SECTION: CONTRACT CLAUSES.

3.5 WASTE DISPOSAL

The Contracting Officer shall be informed of any waste disposal requirements identified during the work and not covered in the Environmental Protection Plan. Waste disposal plans shall be updated and submitted as required.

3.5.1 Solid Wastes

Solid wastes (excluding dredge material and clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

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3.5.2 Chemical Wastes

Chemical waste shall be stored in corrosion resistant containers, removed from the work areas, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any have been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out. The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during excavation or other construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer.

3.7 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction.

3.8 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations outside the neat lines of project features. Such restoration shall be in accordance with the Environmental Protection Plan. This work shall be accomplished at the Contractor's expense and at no additional cost to the Government.

3.9 MAINTENANCE OF POLLUTION FACILITIES

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

3.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities, devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

-- End of Section --

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SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1996) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 SUBMITTALS

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

SD-08 Statements

Laboratory Quality Management Manual; FIO.

The manuals as specified in paragraph: Tests - Testing Laboratories - Capability Check shall be submitted.

Contractor Quality Control Plan; FIO.

The plan as specified in paragraph: Quality Control Plan shall be submitted.

1.3 PAYMENT

The Contractor shall be responsible for the work for the work of this section, without any direct compensation being made other than the payment received for contract items.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

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3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

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

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with

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the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 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 including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

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

3.3 COORDINATION MEETING

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After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 2 years construction experience on construction similar to this contract. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 Additional Requirement

In addition to the above qualifications, the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered through the Government in the Minneapolis - St. Paul, Minnesota metropolitan area.

3.4.4 Organizational Changes

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

3.5 SUBMITTAL PROCEDURES

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

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

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

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

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- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

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

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

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3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

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

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

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing

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procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. The Contractor shall submit a Quality Management Manual meeting the requirements of ASTM D 3740 and ASTM E 329 for each laboratory to be used, including on-site project laboratories.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$1000.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

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

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Contracting Officer. Coordination for each specific test, exact delivery location, and dates will be made with the Contracting Officer.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

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

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be

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corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

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

3.9 DOCUMENTATION

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

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.

RED LAKE CONTROL STRUCTURE

- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

The following sample forms are enclosed at the end of this section:

- a. Construction Quality Control Management Report
- b. CQC Report
- c. Preparatory Phase Checklist
- d. Initial Phase Checklist

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor. -- End of Section --

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CQC Report

1. Work performed today: (Indicate location and description of work performed by prime and/or subcontractors by letter in table above).

2. Results of control activities: (Indicate whether P - Preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete attachment 1-A or 1-B, respectively. When network analysis system is used, identify work by use of I-J numbers)

3. Test performed as required by plans and/or specifications:

4. Material received:

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CQC Report (Cont'd)

5. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6. Off-site surveillance activities, including action taken:

7. Job safety: (Report violations; Corrective instructions given; Corrective actions taken).

8. Remarks: (Instructions received or given. Conflict(s) in Plans and/or Specifications)

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

CQC System Manager

RED LAKE CONTROL STRUCTURE

PREPARATORY PHASE CHECKLIST

Contract No.: _____ Date: _____
Definable Feature: _____ Spec Section: _____

Government Rep Notified _____ Hours in Advance Yes ____ No ____

I. Personnel Present.

Name	Position	Company/Government
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		

(List additional personnel on reverse side)

II. Submittals.

1. Review submittals and/or submittal log 4288. Have all submittals been approved? Yes ____ No ____

If No, what items have not been submitted?

- a. _____
- b. _____
- c. _____

2. Are all materials on hand? Yes ____ No ____

- a. _____
- b. _____
- c. _____

3. Check approved submittals against delivered material. (This should be done as material arrives).

Comments: _____

III. Material Storage.

Are materials stored properly? Yes ____ No ____

If No, what action is taken?

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Preparatory Phase Checklist (Cont'd)

IV. Specifications.

1. Review each paragraph of specifications.

2. Discuss procedure for accomplishing the work.

3. Clarify any differences.

V. Preliminary Work.

Ensure preliminary work is correct.

If not, what action is taken? _____

VI. Testing.

1. Identify test to be performed, frequency, and by whom.

2. When required? _____

3. Where required? _____

4. Review Testing Plan. _____

5. Has test facilities been approved? _____

VII. Safety.

1. Review applicable portion of EM 385-1-1. _____

2. Activity Hazard Analysis approved? Yes _____ No _____

VIII. Corps of Engineers comments during meeting.

CQC System Manager

RED LAKE CONTROL STRUCTURE

INITIAL PHASE CHECKLIST

Contract No.: _____ Date: _____

Definable Feature: _____

Government Rep Notified: _____ Hours in Advance Yes _____ No _____

I. Personnel Present:

Name	Position	Company/Government
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		

(List additional personnel on reverse side)

II. Identify full compliance with procedures identified at preparatory. Coordinate plans, specifications, and submittals.

Comments: _____

III. Preliminary Work. Ensure preliminary work is complete and correct. If not, what action is taken?

IV. Establish Level of Workmanship.

1. Where is work located? _____
2. Is a sample panel required? Yes _____ No _____
3. Will the initial work be considered as a sample? Yes _____ No _____
(If yes, maintain in present condition as long as possible).

V. Resolve any Differences.

Comments: _____

Review job conditions using EM 385-1-1 and job hazard analysis.

Comments: _____

CQC System Manager

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SECTION 01500

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RED LAKE CONTROL STRUCTURE

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 SUBMITTALS

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

SD-04 Drawings

Site Plan; FIO.

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

Government Field Office; FIO.

The Contractor shall submit a preliminary plan and description of the mobile office facilities which it proposes to furnish prior to proceeding with procurement thereof.

Signage and Barricade Plan; FIO.

The Contractor shall submit a plan for signage and barricades as indicated in paragraph: PROTECTION AND MAINTENANCE OF TRAFFIC

1.2 REFERENCES

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

CORPS OF ENGINEERS (COE)

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

1.3 AVAILABILITY AND USE OF UTILITY SERVICES

1.3.1 Temporary Electrical Facilities

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The Contractor shall be responsible for coordination and costs for electrical power required for the Contractor's operations, including all costs for utility company hookup, installation/dismantling of transformers and distribution lines. In general, the Contractor shall establish its own service connection with the utility company. If the Contractor proposes to use an existing Government service connection, a request shall be submitted for approval to verify the Contractor's use will not interfere with operation of the facilities, and the monthly service fees will be paid for in whole (including Government power consumption) by the Contractor.

1.3.2 Sanitation

The Contractor shall provide and maintain within the construction area field-type sanitary facilities in accordance with COE EM 385-1-1. These facilities shall include but not be limited to toilet, washing, and drinking water facilities.

1.3.3 Telephone

The Contractor shall make arrangements and pay all costs for their telephone facilities desired. Government personnel will not take or deliver messages for the Contractor.

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads.

1.4.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full

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width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed.

1.4.2 Barricades

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

1.4.2.1 Coordination

The Contractor shall coordinate the signage and barricade plan, required to close the road and detour the traffic, with the Red Lake Band of Chippewa Indians Tribal Roads and Minnesota Department of Transportation. A copy of the signage and barricade plan shall be provided to the Contracting Officer prior to installation of the signs and barricades.

Jim Garrigan
Red Lake Band of Chippewa Indians Tribal Roads
218-679-2416

Bob Kleinschmidt
Minnesota Department of Transportation
218-755-2592

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Staging Area

The boundary limits of the grounds made available for the Contractor's use during the life of the contract are shown or described on the drawings as Work Limits. Trailers, materials, or equipment shall not be placed or stored outside the work limits unless special arrangements are made and written permission is received.

1.6 PLANT COMMUNICATION

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

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1.7 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, generally located to encompass the active construction areas. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.8 MEASUREMENT AND PAYMENT

The Contractor shall be responsible for the work of this section, without any direct compensation being made other than the payment received for contract line items on the bidding schedule.

PART 2 PRODUCTS

2.1 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

2.1.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

2.1.2 Project and Safety Signs

The Contractor shall furnish and erect a Project sign and a Safety sign in a location selected by the Contracting Officer at the project site within 15 days after receipt of the notice to proceed. The requirements for the signs and their content shall be as shown on the drawings at the end of this section. The data required by the safety sign shall be corrected daily. Signs shall be maintained throughout the construction period, and upon completion of the project, the signs shall be removed from the site. The PROJECT DESCRIPTION and PROJECT NAME shall be as follows:

PROJECT DESCRIPTION: REHABILITATION

PROJECT NAME: RED LAKE DAM

2.2 GOVERNMENT FIELD OFFICE

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The Contractor shall provide and maintain for the life of the contract an approved mobile office (mobile home style) meeting the following requirements as to space and facilities for the exclusive use of the government. The unit shall be ready for occupancy within 30 calendar days after notice to proceed. The unit shall provide a minimum of 400 square feet of floor area and shall include two private offices, each having approximately 100 square feet of floor area and a storage closet. The unit shall have two entrance doors. The remaining space is to be utilized as one large office, a toilet room, a chest of drawers and a storage area for coats, etc. The unit shall be provided with a toilet room consisting of a stool and lavatory and an electric heater. The unit interior headroom shall be no less than a nominal 8'-0".

2.2.1 Location

The Contractor shall locate the portable mobile home type field office at or near the Contractor's field office site at a location approved by the Contracting Officer. Four parking spaces shall be reserved for Government vehicles at the Government trailer.

2.2.2 Construction.

The Government field office shall be similar in quality and age as the Contractor's field office, if provided. Exterior and interior finishes shall be free from color fade, chipping, or peeling. The unit shall be set level on blocking, be provided with plywood skirting, and be anchored to the ground for protection against wind damage. Exterior doors shall be provided with screens and outside hasps for use with padlocks. The unit shall be electrically wired for fluorescent ceiling lighting fixtures and weather proof porch lights at each entrance door, along with switches, duplex convenience outlets, and a master switch and fuse box as required. The entire unit shall be adequately insulated with fiberglass insulation and vapor barrier. Dead air crawl space shall be properly ventilated. Heating and air conditioning facilities shall be provided to maintain an ambient inside temperature of 68 degrees F. The unit shall be weather proof, and furnished with a forced air type heating plant, either gas or oil with hot and cold air ducts adequate to supply even heat throughout the unit. Air conditioning shall be furnished with capacity as recommended by the manufacturer for the trailer size. A central air conditioning system shall be provided.

2.2.3 Utilities.

The Contractor shall be responsible for service fees in connection with electrical power and heating (natural gas or oil service). The Contractor shall also be responsible for service fees in connection with the water supply, sanitary waste system, and telephone as indicated below. When available, city water and sewer system connections are preferred.

- a. Sanitary Facilities. In the absence of a city sewer connection, holding tanks shall be provided. The lavatory shall discharge into an outside underground holding tank with a capacity of not less than 400 gallons and a vented drain. The contractor shall provide year-round

RED LAKE CONTROL STRUCTURE

pumping of the holding tank as required. Subject to approval, a serviced chemical toilet may be used.

b. Potable Water. In the absence of a city water connection, a potable water storage tank of not less than 300 gallons capacity shall be furnished with adequate supply filling connections and screened vent, and shall be stainless steel or plastic with a drain cock of not less than ½ inch size. Upon completion of the job, the Contractor shall remove the underground holding tank and backfill the excavation. The Contractor shall provide potable water for the storage tank if service connections are not provided.

c. Telephone. The Contractor shall be responsible for installation of telephones at the Government office with 2 separate telephone lines. The telephone hook-up should be placed on a separate account from the Contractor's phone so that it can be transferred to the Government after installation. The Government will be responsible for the telephone service to the Government field office after installation.

2.2.4 Furnishings.

The following furnishings shall be provided for the Government office:

- a. A hot and cold drinking water dispenser.
- b. Bulletin board, minimum size 6 square feet.
- c. A cabinet shall be supplied along a side wall with minimum nominal dimensions 2 feet wide, 3 feet high and 6 feet long. The cabinet shall include a finished wood or laminate counter. Two shelves, one above and one below the cabinet, shall be provided for storage.
- d. Sign. The contractor shall securely attach to the unit exterior and adjacent to the main entrance door, as approved, a 24 inch by 36 inch sign with the Corps of Engineers castle insignia with wording as specified.
- e. Stoop. A stoop with 8 inch risers and handrails shall be provided at each entrance door.
- f. Windows. All windows shall be provided with sash and security screens along with shades, blinds or similar features that allow for the complete coverage of the windows on the inside.
- g. Lavatory. A 5 by 24 inch metal shelf and 15 by 20 inch wood or metal framed plate glass mirror shall be provided above the lavatory.
- h. Microwave oven.
- i. Refrigerator.

2.2.5 Furniture

Office furniture shall be coordinated with respect to style, color, and upholstery. The following furniture shall be provided:

- a. Two desks either wood or steel, double pedestal type, top approximately 60 inches by 34 inches, with lock.
- b. Two swivel armchairs with tilting seat and adjustable spring back.
- c. Two filing cabinets, four-drawer legal size, with lock.
- d. One drafting table stool, non-tilting, rotary type with back and circular footrest.
- e. One drafting table, metal and/or wood, 36 inches by 48 inches.
- f. One conference table, ¾ inch thick by 72 inches long by 36

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inches wide with solid core construction top.

g. Eight chairs for conference table, either wood or steel construction, with cushioned seat and backrest.

h. One rack for hanging full size drawings.

2.2.6 Office Equipment

The following equipment shall be provided:

a. One desk top facsimile (FAX) machine with modem BPS speeds of 9600,7200,4800, and 2400; an effective scanning width of 11.7 inches and line scanning density of 8 pels/mm horizontal and an effective scanning width of 7.7 inches and line scanning density of 3.85 lines/mm vertical. Initially supply four reams of paper(500 sheets per ream).

b. One plain paper desk top copying machine with an indirect dual component dry tone process. Paper copy sizes shall be a maximum of 11 inches by 17 inches and a minimum of 4.25 inches by 5.5 inches. The machine shall have a halogen lamp light source and an automatic sheet feed (single cassette). Initially supply four reams (500 sheets per ream) of white copying paper and furnish a complete maintenance service contract/agreement for the machine.

c. One personal computer (PC) having the following as a minimum: Intel Pentium 233 megahertz processor, 64 megabytes random access memory (RAM), 3.0 gigabyte hard drive, 17 inch SVGA monitor, AT enhanced 103 key keyboard, and one Microsoft compatible two button mouse. The PC shall be completely setup and operational with the following software: Microsoft "Windows 95", Microsoft "Office Professional" and Microsoft "Access". In addition to the PC, the Contractor shall supply a plain paper printer and all necessary software, compatible with the PC, completely setup and operational.

2.2.7 Maintenance.

The Contractor shall maintain the field office for the life of the contract. The Contractor shall be responsible for maintaining and paying for all costs associated with the following services:

a. Supplies. Toilet paper, paper toweling, paper and supplies for the FAX and copy machines shall be provided. Supply water for the drinking water dispenser. Supply water for the lavatory if a service connection is not provided for potable water.

b. Maintenance of office equipment. Include a maintenance service contract/agreement for operation of the Computer, Printer, Fax and Copy machines.

c. Janitorial Service. The Contractor shall provide daily janitorial service and provide all janitorial and sanitary supplies as well as trash removal service.

d. Snow removal. Maintenance of site access including snow removal service is the responsibility of the contractor.

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PART 3 EXECUTION

3.1 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

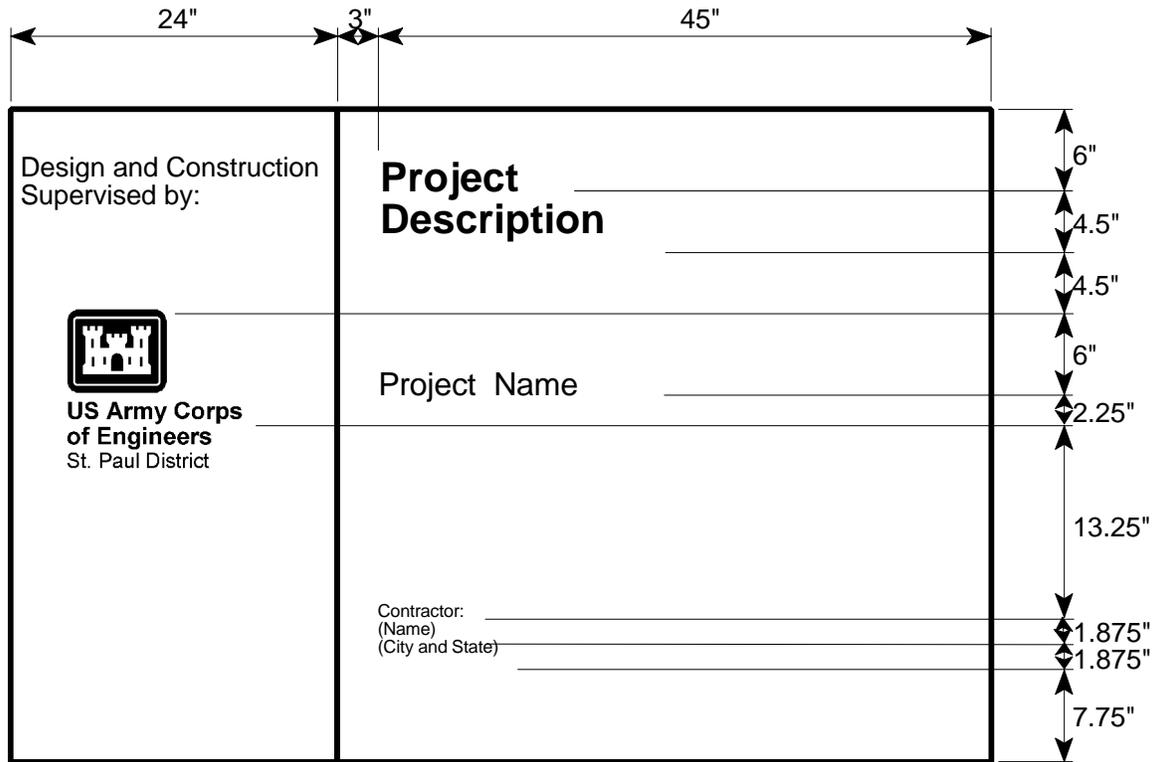
3.2 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

-- End of Section --

PROJECT SIGN

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. A 2' x 4' decal provided by the Corps shall be placed on the left side of the sign panel.



Project Description:

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".

Project Name:

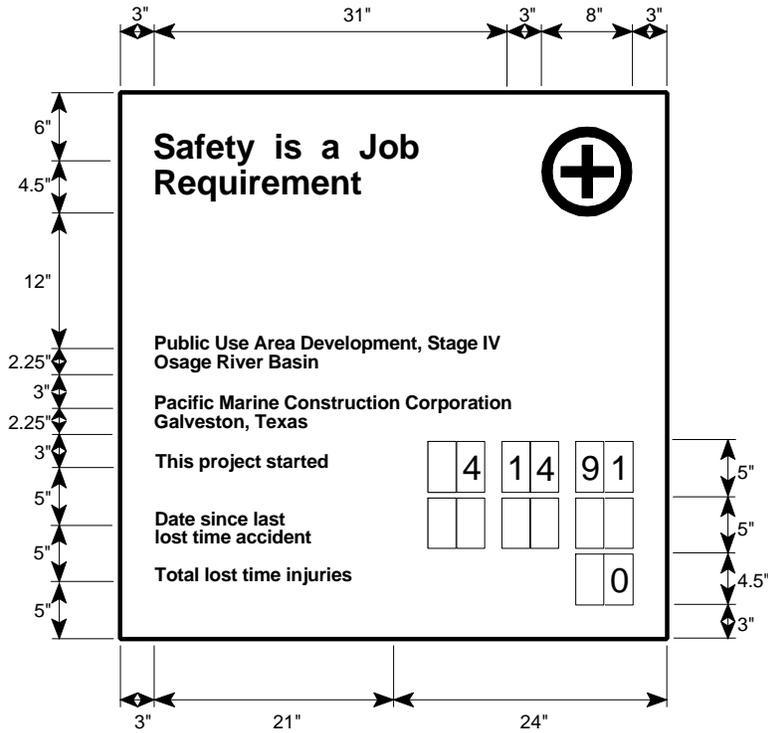
One to three line identification of project or facility.
 Color: Black; Typeface: 1.5" Helvetica Bold; Maximum line length: 42".
 Cross-align the first line of PROJECT NAME with the first line of the Corps Signature as shown.

Contractor:

One to five line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state.
 Color: Black; Typeface: 1.25" Helvetica Bold; Maximum line length: 21".

All typography is flush left and ragged right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

SAFETY SIGN



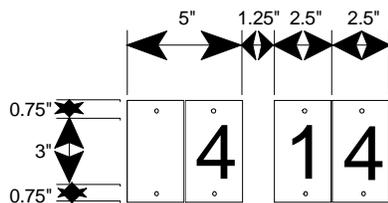
All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with (8" od.) Safety Green First Aid logo. Typeface: 3" Helvetica Bold; Color: Black.

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

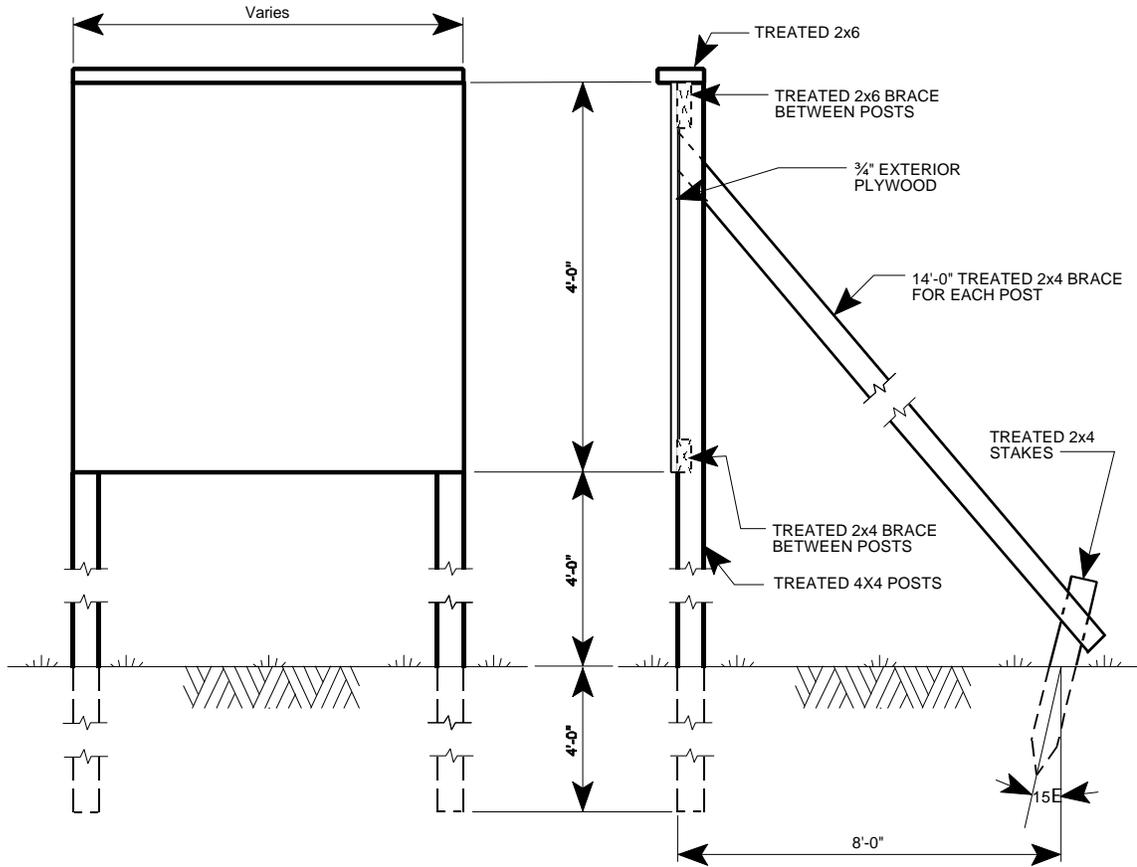
Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

Legend Group 4: Standard safety record captions as shown. Typeface: 1.25" Helvetica Regular; Color: Black.



Replaceable numbers are to be mounted on white 0.060 aluminum plates and screw-mounted to background. Typeface: 3" Helvetica Regular; Color: Black; Plate size: 2.5" x 4.5".

SIGN ERECTION DETAILS



RED LAKE CONTROL STRUCTURE

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SECTION 01567

MINNESOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PART 1 GENERAL

1.1 GENERAL

This section covers best management practices to be implemented for prevention of storm water pollution as required by the National Pollutant Discharge Elimination System (NPDES). The Minnesota Pollution Control Agency is responsible for administering permits for NPDES in the state of Minnesota. The Government has determined that the project work included under this contract requires NPDES permitting. The requirements herein supplement those covered in SECTION 01410: ENVIRONMENTAL PROTECTION.

1.1.1 Definitions

The following terms apply to this specification and the general permit, unless redefined in subsequent paragraphs.

- a. "Plan" means the Temporary Erosion and Sediment Control Plan.
- b. "EPA" means the United States Environmental Protection Agency.
- c. "MPCA" means the Minnesota Pollution Control Agency.
- d. "NPDES" means the National Pollutant Discharge Elimination System.
- e. "MPDES" means the Minnesota Pollutant Discharge Elimination System.
- f. "Owner" as referred to in the general permit shall mean the Federal Government.
- g. "Permittees" as referred to in the general permit shall mean the Federal Government and Contractor.
- h. "General Permit" means the general permit authorization to discharge storm water associated with a construction activity under the National Pollutant Discharge Elimination System/State Disposal System Permit Program.
- j. "BMP" means Best Management Practices.

1.1.2 Contract Drawings

The following features are shown on or can be determined from the contract drawings:

- a. The drainage patterns and approximate slopes anticipated after the major grading activities.
- b. Areas of soil disturbance.
- c. The location(s) where stabilization practices are expected to occur.
- d. Typical details showing suggested Best Management Practices (BMP's) for erosion and sediment control.
- e. Waters of the State.
- f. Final site stabilization.

1.2 REFERENCES

RED LAKE CONTROL STRUCTURE

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.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA/832/R-92/005 Storm Water Management for Construction Activities - Developing Pollution Prevention Plans and Best Management Practices

MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT)

MNDOT 3885 Standard Specifications for Construction (1995 Edition), Erosion Control Blankets

MNDOT 3886 Standard Specifications for Construction (1995 Edition), Silt Fence

MNDOT 3887 Standard Specifications for Construction (1995 Edition), Flotation Silt Curtain

1.3 SUBMITTALS

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

SD-04 Drawings

Temporary Erosion And Sediment Control Plan; FIO.

A specific Temporary Erosion and Sediment Control Plan shall be submitted in accordance with PARAGRAPH: PERMIT COMPLIANCE AND ADDITIONAL REQUIREMENTS.

SD-18 Records

Application; GA.

A copy of the Application for General Storm Water Permit for Construction Activity (MPCA Form PQ00641) shall be submitted to the Contracting Officer at the same time it is transmitted to the state.

Notice of Termination; FIO.

A copy of the notice of termination shall be submitted to the Contracting Officer at the same time it is transmitted to the state.

1.4 PERMIT COMPLIANCE AND ADDITIONAL REQUIREMENTS

The Contractor shall comply with the requirements of General Permit No. MNR100000. The following define additional requirements and clarify which

RED LAKE CONTROL STRUCTURE

requirements of the General Permit are to be performed by either the Contractor, the Government, or both.

1.4.1 Schedule

No contract project construction activities which requires an NPDES permit may commence until the MPDES permit is valid.

1.4.2 Temporary erosion and sediment control plan

The contract drawings show a typical details of suggested best management practices (BMP's) for erosion and sediment control taken from EPA/832/R-92/005. The BMP's, together with applicable portions of the site drawings and specifications form an initial plan for temporary erosion and sediment control. The Contractor shall finalize and implement the plan. The finalized plan, together with documentation, shall be in accordance with the general permit. The plan shall be maintained at the site and made available to federal, state, and local officials as requested. The Contractor shall determine the specific BMP's for erosion and sediment control (including the types, locations, and installation scheduling of erosion and sediment controls). These BMP's and corresponding material specifications and shop drawings shall be included in the Plan.

1.4.3 Application

The Application for General Storm Water Permit for Construction Activity must be signed by the Government and the Contractor. A blank copy of the application form is included at the end of this section. Immediately after contract award, the Contractor shall complete parts I, II and V of the application form, obtain signature by the Government, and submit the form to the state. The application shall be post marked at least 48 hours in advance of any ground breaking activities. The Contractor is responsible for payment of the application fee.

1.4.4 Permanent erosion and sediment control plan

The Government has developed the Permanent Erosion and Sediment Control Plan and will maintain availability of the plan to federal, state, and local officials as required in the General Permit.

1.5 MEASUREMENT AND PAYMENT

The contractor shall be responsible for the work of this section, without any direct compensation being made other than the payment received for contract items.

PART 2 PRODUCTS

2.1 SILT FENCE

Silt fence shall be manufactured and installed as shown on drawings. On level sites with minimal potential for sediment loading, the wire fabric may be omitted. Fabric for silt fence shall conform to requirements given

RED LAKE CONTROL STRUCTURE

in MNDOT 3886.

2.2 STRAW BALES

Straw shall be baled from oats, wheat, rye, barley, rice, or other coarse fiber vegetation that will percolate water. Hay baled from grass, alfalfa and clover is not acceptable.

2.3 OTHER PRODUCTS

Any products proposed for use that are not included on drawing Z2-22 shall be described fully, with catalog cuts and manufacturer's instructions for use, in the temporary erosion and sediment control plan. Other products, if proposed in the final plan, shall meet the following requirements:

Erosion control blankets shall meet MNDOT 3885
Floatation Silt Curtain shall meet MNDOT 3887

PART 3 EXECUTION

As between the Government and the Contractor, the Contractor shall be responsible for fulfilling the obligations of the general permit for the following sections:

Part I-C: Records
Part I-D: Erosion and Sediment Control During Construction
Part I-E: Inspection and Maintenance
Appendix A: Temporary Erosion and Sediment Control Plan

3.1 IMPLEMENTATION

The Contractor shall install the sediment and erosion control system in accordance with the plan submitted to the Contracting Officer. The BMP's shall be modified if inspection indicates distress to the system or reveals unforeseen circumstances, or if directed by the Contracting Officer. Any updates to the plan shall be recorded. Permanent stabilization shall be initiated as soon as practicable in any portion of the site where construction activities are complete.

3.2 MAINTENANCE

The Contractor shall be responsible for implementing and managing the erosion and sediment control BMP's before and during the construction activities; and ensure that the Plan will be implemented and stay in effect until the work has been completed, the entire work site has undergone final stabilization, and a Notice of Termination has been submitted to the Contracting Officer and the state permitting authority.

3.3 RECORDS

The contractor shall record on CQC reports: (1) dates when major stripping and grading activities occur, (2) dates when construction activities temporarily or permanently cease on a portion of the site, (3) when

RED LAKE CONTROL STRUCTURE

permanent stabilization practices are initiated, and (4) activities associated with inspection and maintenance.

3.4 ATTACHMENTS

Application for General Storm Water Permit for Construction Activity (MDNR Form PQ00641 with instructions) 4 Pages

MPDES General Permit No. MN R100000 21 Pages

-- End of Section --



Application for General Storm Water Permit for Construction Activity (#MNR100000)

Minnesota Pollution Control Agency
520 Lafayette Road North; St. Paul, MN 55155-4194



I. Construction Site Information

- Name of project: _____
- Brief description of where the construction activity occurs (please include address, if available):

- Indicate ALL cities, counties, and townships where the construction activity will take place:

- Name of waterbody(s) that will receive storm water from the construction site:

- Project start date: _____ Project completion date: _____ Area to be disturbed by project: _____
(in acres)

II. Prerequisites for Applying for a Permit

For the following questions, please refer to the **NPDES General Storm Water Permit (MNR100000)**. A "No" answer for any question will result in this form being returned to the owner with no permit issued to authorize the construction activity. This application will need to be completed and returned to the MPCA before a permit to authorize the construction activity may be issued.

- Has a **Temporary Erosion and Sediment Control Plan** been developed for this project in accordance with Appendix A and incorporated into this project's final plans and specifications? Yes No
- Has a **Permanent Erosion and Sediment Control Plan** been developed for this project in accordance with Appendix B and incorporated into this project's final plans and specifications? Yes No
- Has the Application Fee been enclosed? Yes No

III. Owner Information

Name _____ Telephone _____

Address _____

City _____ State _____ Zip Code _____

Contact Person _____ Telephone _____

IV. Owner 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 (Minnesota Rules part 7001.0070).

I also certify under penalty of law that I have read, understood, and accepted all terms and conditions of the National Pollutant Discharge Elimination System (NPDES) General Storm Water permit (MNR100000) that authorizes storm water discharges associated with the construction site identified on the front side of this form.

I understand that as a permittee, I am legally accountable under the Clean Water Act, to ensure compliance with the terms and conditions of the NPDES General Storm Water Permit (MNR100000).

I also understand that MPCA enforcement actions (pursuant to Minnesota Statutes sections 115.07, 116.072, and 609.71 and Section 309 of the Clean Water Act) may be taken against my company if the terms and conditions of the NPDES General Storm Water Permit (MNR100000) are not met.

Printed Name

Title (Manager, CEO, etc.)

Authorized Signature

Date

V. General Contractor Certification

I certify under penalty of law that I have read, understood, and accepted all terms and conditions of the National Pollutant Discharge Elimination System (NPDES) General Storm Water permit (MNR100000) that authorizes storm water discharges associated with the construction site identified on this form.

I understand that for Parts I.B. through I.E, Appendix C, and Appendix D of the General Storm Water Permit (MNR100000) I am becoming a co-permittee with the owner of the facility for which I have been contracted to perform professional construction services. As a co-permittee I understand that my company is legally accountable, under the Clean Water Act, to ensure compliance with the terms and conditions of the General Storm Water Permit (MNR100000).

I also understand that MPCA enforcement actions (pursuant to Minnesota Statutes sections 115.07, 116.072, and 609.71 and Section 309 of the Clean Water Act) may be taken against my company if the terms and conditions of the NPDES General Storm Water Permit (MNR100000) for which I am a co-permittee, are not met.

Company or Firm

Telephone

Printed Name

Title (Manager, CEO, etc.)

Authorized Signature

Date

Address

City

State

Zip Code

Contact Person

Telephone



Application Instructions for General Storm Water Permit

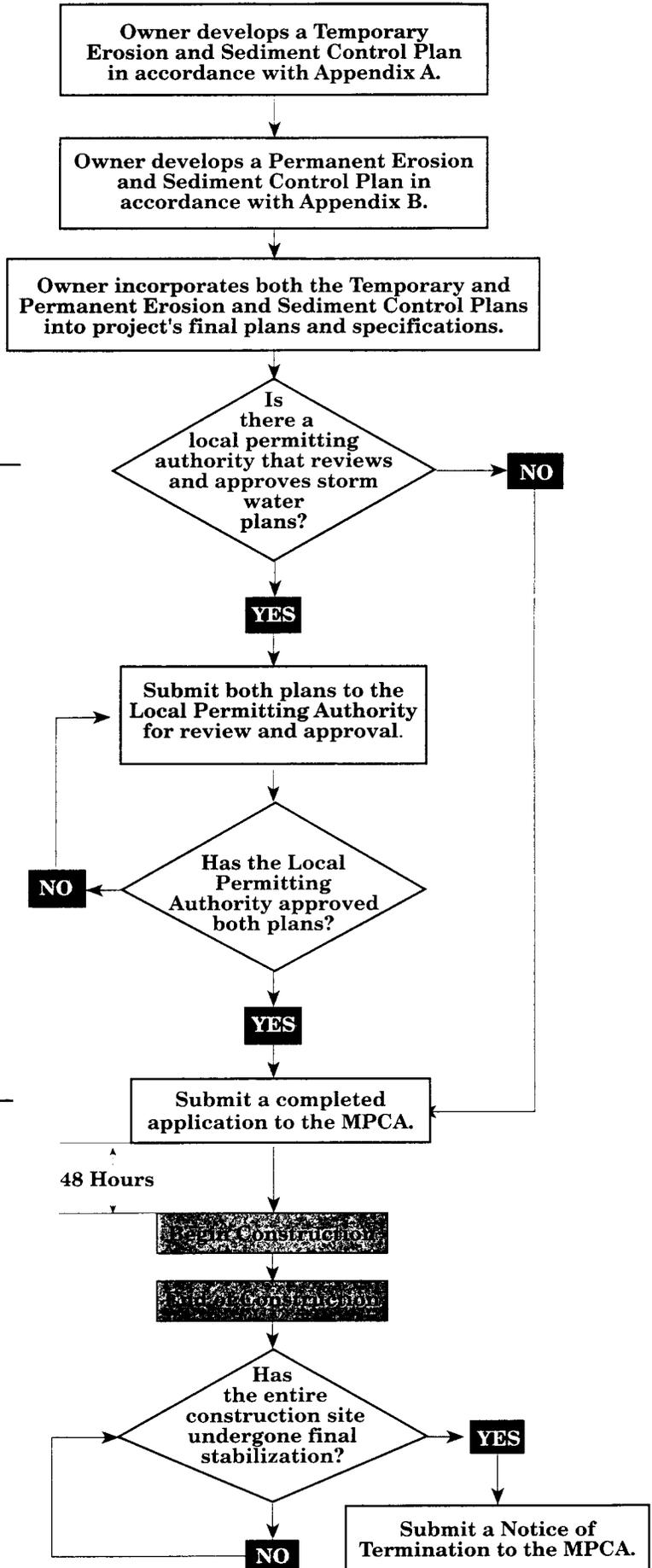
CONSTRUCTION ACTIVITY



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

Application Process for Coverage Under Storm Water Permit for Construction Activity



Applicants still need to seek approval through required permitting process at the local, state, and federal levels.

For additional information call:

(612) 296-7219 or
1-800-657-3804

People with speech or hearing impairments may call (612) 282-5332 or 1-800-627-3529



Minnesota Pollution Control Agency

GENERAL PERMIT

AUTHORIZATION TO DISCHARGE

STORM WATER ASSOCIATED WITH A CONSTRUCTION

ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION

SYSTEM/STATE DISPOSAL SYSTEM PERMIT PROGRAM

ISSUANCE DATE: September 4, 1998

EXPIRATION DATE: September 4, 2003

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et seq., hereinafter, the "Act"); 40 CFR 122, 123, and 124, as amended, et seq.; Minnesota Statutes Chapters 115 and 116, as amended, and Minnesota Rules Chapter 7001:

This permit establishes conditions for discharging storm water to waters of the state from construction activities which disturb five or more acres of total land area.

This permit DOES NOT authorize:

- 1) Discharges or releases that are not storm water as defined on Page 18 (see "Prohibitions" on Page 14 of this permit).
- 2) The placement of fill into waters of the state.

Unless notified by the Agency to the contrary, applicants who submit a complete application form in accordance with the requirements of this permit are authorized to discharge storm water from construction sites under the terms and conditions of this permit 48 hours after the date the application is postmarked.

Coverage under this permit will remain in effect until construction is complete, the site has undergone final stabilization, all maintenance activities required in Part I.E. have been completed, and the Permittee has submitted a Notice of Termination, regardless of the above expiration date.

Signature:

John N. Holck
John N. Holck, Manager
South District
Operations & Planning/Major Facilities

for

Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

If you have questions on this permit, including the specific permit requirements, permit reporting or permit compliance status, please contact:

Minnesota Pollution Control Agency
Metro District, Storm Water Permit Program
520 Lafayette Road North
St. Paul, MN 55155-4194
Telephone (651) 296-3890
Fax (651) 297-8701

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I. REQUIREMENTS OF THIS PERMIT

A. PREREQUISITES FOR SUBMITTING A PERMIT APPLICATION

Failure to complete the following prerequisites prior to submitting the **application** will result in the **application** being returned, and the construction project NOT authorized by this **permit**.

1. The **owner** must develop a Temporary **Erosion and Sediment Control Plan** in accordance with "Appendix A." The plan requirements must be incorporated into the project's **final plans and specifications** and implemented as part of the project.
2. The **owner** must develop a Permanent **Erosion and Sediment Control Plan** in accordance with "Appendix B." The plan requirements must be incorporated into the project's **final plans and specifications** and implemented as part of the project.

The above plans are NOT to be submitted to the Agency but are to be retained by the owner in accordance with Appendices A and B; "Plan Retention."

B. APPLICATION FOR COVERAGE

1. The **owner** and **general contractor** are responsible for submitting a completed **application** form (or a photocopy thereof) to the Minnesota Pollution Control Agency (MPCA) for each project which disturbs five (5) or more acres of land.
2. The **owner** who signs the **application** is responsible for compliance with all terms and conditions of this **permit**. The **general contractor** who signs the **application** is a Co-Permittee for Parts I.B. through I.E., Appendix C, and Appendix D of this **permit**. and is responsible for compliance with those portions of this **permit**.
3. This permit will become effective 48 hours after the postmarked date of the completed **application** form containing "Yes" responses to questions 6, 7, and 8. A "No" response to question 6, 7, or 8 will result in the application being returned to the owner, and no permit will be issued to authorize the construction. No construction which requires an NPDES permit may commence unless authorized by an NPDES permit.
4. Permittees will receive a "Notice of Storm Water Permit Coverage" card acknowledging permit coverage within 30 days of the postmarked date of the completed **application**. (See I.D.3. for posting requirements.) A photocopy of this card must be provided by the **owner** to the **local permitting authority**, where applicable, within 14 days of receipt.

C. RECORDS

1. The project's **final plans and specifications** which incorporate the requirements of the Temporary Erosion and Sediment Control Plan and Permanent Erosion and Sediment Control Plan must be:
 - a. available at the construction site in either the field office, or, inspector's vehicle, or contractor's vehicle, and,
 - b. available to federal, state, and local officials (in accordance with Appendix D, Subpart C) for inspection for the duration of this permit.
2. The following plans/records must be made available to federal, state and local officials within 24 hours of request (in accordance with Appendix D, Subpart C.) for the duration of the permit:
 - a. Temporary Erosion and Sediment Control Plan developed in accordance with Part I.A.1. (if a separate document from the project's **final plans and specifications**).
 - b. Permanent Erosion and Sediment Control Plan developed in accordance with Part I.A.2.
 - c. Records of all inspections (see Part I.E.). Records shall include:
 - 1) Date and time of inspections,
 - 2) Findings of inspections,
 - 3) Corrective actions taken (including dates and times)
 - 4) Documentation of changes to the Temporary Erosion and Sediment Control Plan made during construction.
 - d. Date of all rainfall events.
3. The "Notice of Storm Water Permit Coverage" card shall be posted at any of the following locations:
 - a. construction site entrance and visible from the nearest public roadway
 - b. visible from the nearest public roadway, where no construction site entrance exists
 - c. field office (if applicable)
 - d. for linear utility and non-contiguous municipal projects, at the office responsible for project administration.

D. EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

1. Erosion Control

- a. The **Permittee(s)** shall use, where possible, horizontal slope grading, construction phasing, and other construction practices that minimize **erosion**.
- b. Unless precluded by snow cover, all **exposed soil areas*** with a continuous positive slope within 100 lineal feet from a water of the state, or from a curb, gutter, storm sewer inlet, temporary or permanent drainage ditch or other **storm water** conveyance system, which is connected to a water of the state, shall have **temporary protection or permanent cover** for the **exposed soil areas** within the following time frames:

<u>Type of Slope</u>	Temporary protection or permanent cover where the area has not been, or will not be, worked by the contractor for:
Steeper than 3:1	7 days
10:1 to 3:1	14 days
Flatter than 10:1	21 days

*For the purposes of this provision, **exposed soil areas** do not include stockpiles or surcharge areas of sand, gravel, aggregate, concrete or bituminous.

- c. The bottom of any temporary or permanent drainage ditch constructed to drain water from a construction site must be stabilized within 100 lineal feet from a water of the state. Stabilization must be initiated within 24 hours of connecting the drainage ditch to **a water of the state**, existing gutter, storm sewer inlet, drainage ditch, or other **storm water** conveyance system which discharges to **waters of the state** and completed within five calendar days.
- d. Prior to connecting any pipe to a **water of the state** or drainage ditch, the pipe's outlet must be provided with temporary or permanent **energy dissipation** to prevent erosion.

2. Sediment Control

- a. **Sediment control best management practices (BMPs)**, which prevent **sediment** from entering a **water of the state**, gutter, storm sewer inlet, ditch or other storm water conveyance system, shall be established on all down-gradient perimeters before any up-gradient land disturbing activities begin, and shall remain in place until final stabilization has been established.
- b. The Permittee shall minimize vehicle tracking of **sediment** or **soil** off site at locations where vehicles exit the construction site onto **paved surfaces**.
- c. Where 10 or more contiguous acres of **exposed soil** are contributing to a discernible point of **discharge**, temporary sedimentation basins* must be provided prior to the runoff leaving the construction site or entering **waters of the state**.

These sedimentation basins shall comply with the following:

- 1) Basins shall provide 1800 ft³ per acre drained of hydraulic storage below the outlet pipe. For roadways, the use of adjacent drainage ditches with riser pipes to accomplish this is acceptable.
- 2) Basin outlets shall be designed to prevent short circuiting and the **discharge** of floating debris. The outlet should consist of a perforated riser pipe wrapped with filter fabric and covered with crushed gravel. The perforated riser pipe should be designed to allow complete basin drawdown.

*While recommended, this provision will not be required for:

- 1) work on existing roadways where the 10 acre disturbed common drainage area is served by an existing storm sewer which is daylighted off the road's right-of-way,
or,
- 2) proximity to bedrock or vertical relief precludes it,
or,
- 3) final stabilization will be established within 30 days of the initiation of construction activity.

E. INSPECTIONS AND MAINTENANCE

1. Except where work has been suspended due to frozen ground conditions, the **Permittee(s)** shall inspect the construction site once every seven (7) days and within 24 hours after every rain event, which results in runoff leaving the construction site or entering **waters of the state**. The **Permittee** shall investigate and comply with the following inspection and maintenance requirements:

a. Inspection Requirement: All **erosion** and perimeter **sediment control BMPs** to ensure integrity and effectiveness.

Maintenance Requirement: All nonfunctional perimeter **sediment control BMPs** shall be repaired when the sediment reaches 1/3 of the height, or replaced, or supplemented with functional **BMPs** within 24 hours of discovery. All nonfunctional **erosion control BMPs** shall be repaired, replaced, or supplemented with functional **BMPs** as soon as field conditions allow access.

b. Inspection Requirement: All temporary sedimentation basins to ensure effectiveness.

Maintenance Requirement: When the depth of sediment collected in the basin reaches 1/2 the height of the riser, or 1/2 the storage volume, the basin shall be drained and the sediment removed. Drainage and removal shall be completed within 72 hours of discovery, or as soon as field conditions allow access.

c. Inspection Requirement: Drainage ditches and other **waters of the state** for evidence of **sediment** leaving the site.

Maintenance Requirement: Unless the project has received approval or certification for depositing fill into waters of the state, the **Permittee** shall remove all deltas and **sediment** deposited in drainage ways, catch basins, or **waters of the state**, and restabilize the areas where **sediment** removal results in **exposed soil**. The removal and stabilization shall take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access restraints. If precluded, removal and stabilization must take place within seven calendar days of obtaining access. The **Permittee** is responsible for contacting all local, regional, state and federal authorities prior to working in waters of the state, and receiving any applicable permits.

- d. Inspection Requirement: Construction site vehicle exit locations for evidence of off-site **sediment** tracking onto paved **surfaces**.

Maintenance Requirement: Tracked **sediment** shall be removed from paved **surfaces**, which do not drain back into the construction site, within 24 hours of discovery.

2. Where parts of the construction site have undergone **final stabilization**, but work remains on other parts of the site, inspections of the stabilized areas may be reduced to once per month.
3. Where work has been suspended due to frozen ground conditions, the inspections and maintenance required in Part I.E.1. above shall take place as soon as weather conditions warrant or prior to resuming construction.
4. Unless required to remain in place by the **owner** or **local permitting authority**, all temporary synthetic, structural, and nonbiodegradable **erosion** and **sediment control BMPs** shall be removed after the site has undergone **final stabilization**.
5. After the entire project has undergone **final stabilization**, all temporary sedimentation basins to be used as permanent water quality management basins must be cleaned out by the **Permittee** to provide the sediment storage capacity required in Part I.D.2.c.2. **Permittees** are responsible for the maintenance of water quality management **BMPs** until construction is complete, the site has undergone **final stabilization**, and a **Notice of Termination** has been submitted to the **Agency**.

F. DURATION OF PERMIT COVERAGE

The **owner** and **general contractor** are responsible for complying with their respective portions of this permit until construction is complete, all maintenance activities required in Part I.E. are complete, the site has undergone **final stabilization** and a **Notice of Termination** is submitted to the **Agency**.

G. APPENDICES INCORPORATED BY REFERENCE

Appendices A, B, C, and D are incorporated into this permit by reference and are made both integral and enforceable parts of this permit.

APPENDIX A

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

(Completed prior to submittal of an application)

A. GOAL: The goal of the Temporary Erosion and Sediment Control Plan is to prevent **sediment** from entering **waters of the state** during construction. The **owner** shall incorporate **Best Management Practices (BMPs)** into the project's **final plans and specifications**, which are designed to meet this goal and comply with Parts I.D. and I.E. of this **permit**. While the general requirements are identified in Parts I.D. and I.E. of this **permit**, it is the **owner's** responsibility to select the appropriate **BMPs** which satisfy these requirements.

B. ASSIGNING RESPONSIBILITY

When developing bidding documents or other contracts, the **owner** must identify who will implement and manage the **erosion and sediment control BMPs** before and during construction; and ensure that the plan will be implemented and stay in effect until the construction project is complete, the entire site has undergone **final stabilization**, and a **Notice of Termination** has been submitted to the Agency. In addition, the **final plans and specifications** must clearly identify who will be responsible for the maintenance requirements identified in Part I.E. of this permit.

C. PLAN CONTENTS

The Temporary **Erosion and Sediment Control Plan**, if developed as a document separate from the project's **final plans and specifications**, must be prepared for the proposed project. The plan must contain appropriate **BMPs** which comply with Parts I.D. and I.E. of this permit and contain **standard plates** and/or specifications of these **BMPs**.

1. **Standard plates** and/or specifications must be provided for all **BMPs**, selected by the designer to be used on the project, and at a minimum, must include the following:
 - a. perimeter sediment control
 - b. placement and type of **temporary cover**
2. Where applicable, **standard plates** and/or specifications must also be provided for the following:
 - a. horizontal slope grading
 - b. proposed stabilized vehicle entrances
 - c. temporary sedimentation basins
 - d. storm sewer pipe outlet energy dissipation
 - e. storm sewer inlet control
 - f. **erosion and sediment control** requirements for stockpile areas

All boldfaced terms are defined in "Definitions", Pages 15 through 18.

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Appendix A Appendix A Appendix A Appendix A Appendix A Appendix A Appendix A

APPENDIX C

PROVISIONS

A. APPLICABILITY CRITERIA

1. This permit covers storm water discharges associated with a construction activity which disturb **five (5) or more acres of land** in all areas of the state of Minnesota, except for agricultural/silvicultural activities.
2. This is a National Pollutant Discharge Elimination System/State Disposal System general permit.
3. If the Commissioner determines that storm water discharges associated with a construction activity, or other activities, are contributing to a violation of a water quality standard or would be more appropriately regulated by an individual permit, the Commissioner may require a Permittee to be covered by an individual storm water discharge permit. The Commissioner may require a Permittee to develop and implement specific best management practices. Upon issuance of an individual permit, this general permit would no longer apply.
4. A permit applicant, or Permittee, may request an individual permit.

B. MPCA ADDRESS

Submit all forms, correspondence, reports, etc. to the following address:

Minnesota Pollution Control Agency
Water Quality Division
Attn: Construction Activity Storm Water Program
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

C. RESPONSE

The Permittee shall respond to Agency requests for submittal of temporary and permanent erosion and sediment control plans and water quality management plans, certificates, reports, records, or other information required by this permit. Upon request, the Permittee shall also provide a copy of this information to the local permitting authority and municipal storm sewer operator.

D. AUTHORIZED DISCHARGES

All discharges of storm water associated with a construction activity shall be composed entirely of storm water.

E. PROHIBITIONS

Discharges of any material other than storm water, such as vehicle and equipment maintenance spills; wash water; oil and other hazardous substances are prohibited by this permit.

F. DEFINITIONS

1. "Act" means the Clean Water Act (formerly the Federal Water Pollution Control Act), United States Code, Title 33, Sections 1251 et seq., as amended.
2. "Agency" means the Minnesota Pollution Control Agency (MPCA).
3. "Application" means a completed application for activities regulated by this permit. Application forms are available from the Agency.
4. "Best Management Practices (BMPs)" means erosion and sediment control and water quality management practices that are the most effective and practicable means of controlling, preventing, and minimizing degradation of surface water, including construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, and other management practices published by state or designated areawide planning agencies.

Examples of BMPs can be found in Protecting Water Quality in Urban Areas, Minnesota Pollution Control Agency 1989, and Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, U.S. Environmental Protection Agency 1992 as a reference for BMPs, and Erosion Control Design Manual, Minnesota Department of Transportation, et al, 1993.

5. "Construction Activity" means a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography which may result in accelerated storm water runoff, leading to soil erosion and movement of sediment into waters of the state. Examples can include clearing, grading, filling and excavating.
6. "Discharge" means the conveyance, channeling, runoff, or drainage, of storm water, including snow melt, from a construction site.
7. "Energy Dissipation" means methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to; aprons, riprap, splash pads, and gabions which are designed to prevent erosion.
8. "Erosion" means the wearing away of soil by rainfall, surface water runoff, wind, or ice movement.
9. "Erosion Control" means methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.
10. "Exposed Soil Areas" means all areas of the construction site where the perennial vegetation (including trees, shrubs, and brush) has been removed. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site.

11. **"Final Plans and Specifications"** means the reports, prints, drawings, written descriptions, and clear technical requirements necessary to build a project used by the owner for the purposes of entering into a construction contract.
12. **"Final Stabilization"** means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70 percent of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been employed. Examples of vegetative cover practices can be found in Supplemental Specifications to the 1988 Standard Specifications for Construction (Minnesota Department of Transportation, 1991).
13. **"Five or more acres of total land area"** means any project that disturbs at least five acres of land measured by the project's construction corridor, excluding areas staked as not to be disturbed. If the project is less than five acres, but is part of larger common plan of development or sale (where multiple separate and distinct construction activities may be taking place at different times on different schedules but under one plan), it is defined as "five acres or more of total land area."
14. **"General Contractor"** means the party who signs the construction contract with the owner to construct the entire project described in the final plans and specifications. Where the construction project involves more than one contractor, the general contractor will be the party responsible for managing the entire project on behalf of the owner. In some cases, the owner may be the general contractor. In these cases, the owner will sign the permit application as the general contractor and would become the sole permittee.
15. **"Impervious Surface"** means a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.
16. **"Local Permitting Authority"** means the township, county, municipality, conservation district, watershed district, watershed management organization, or other public entity which has the authority to review and approve construction activities.
17. **"Local Unit of Government's Existing Storm Water Management Plan or Practice"** means plans or practices developed by the local permitting authority under state law for the purposes of protecting water quality.

18. **"National Pollutant Discharge Elimination System (NPDES)"** means the program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and United States Code Title 33, Sections 1317, 1328, 1342, and 1345.
19. **"Notice of Termination"** means notice to terminate coverage under this permit after construction is complete, the site has undergone stabilization, and all conditions of this permit have been satisfied. Notice of Termination forms are available from the Agency.
20. **"Owner"** means the person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.
21. **"Permanent Cover"** means final stabilization. Examples include grass, gravel, asphalt, and concrete.
22. **"Paved Surface"** means a constructed hard, smooth surface made of asphalt, concrete or other pavement material. Examples include, but are not limited to, roads, sidewalks, driveways and parking lots.
23. **"Permit"** means a National Pollutant Discharge Elimination System/ State Disposal System (NPDES/SDS) permit.
24. **"Permittee"** means a person, firm, or governmental agency or other institution who signs the application submitted to the Agency and is responsible for compliance with the terms and conditions of this permit.
25. **"Runoff Coefficient"** means the fraction of total precipitation that is not infiltrated into or otherwise retained by the soil, concrete, asphalt or other surface upon which it falls that will appear at the conveyance as runoff.
26. **"Sediment"** means the product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, air, or ice, and has come to rest on the earth's surface either above or below water level.
27. **"Sediment Control"** means methods employed to prevent sediment from leaving the site. Sediment control practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.
28. **"Soil"** means the unconsolidated mineral and organic mineral material on the immediate surface of the earth.

29. **"Stabilized"** means the exposed ground surface has been covered by staked sod, riprap, wood fiber blanket, or other material which prevents erosion from occurring. Grass seed is not stabilization.
30. **"Standard Plates"** means general drawings having or showing similar characteristics or qualities that are representative of a construction practice or activity.
31. **"Storm water"** means the precipitation runoff, storm water runoff, snow melt runoff, and any other surface runoff and drainage (defined in 40 CFR 122.26 [b][13]). Storm water does not include construction site dewatering.
32. **"Temporary Protection"** means methods employed to prevent erosion. Examples of temporary include; straw, wood fiber blanket, wood chips, and erosion netting.
33. **"Waters of the State"** means all streams, lakes, ponds, marshes, wetlands, watercourses, waterways, drainage systems and all other bodies or accumulations of waters, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portions thereof. Waters of the state do not include storm water detention basins, or wetlands constructed for the purposes of treating storm water, which do not discharge to surface waters.

APPENDIX D

RESPONSIBILITIES

A. TRANSFER OWNERSHIP OR CONTROL

This permit may not be assigned or transferred by the permit holder. Where a new general contractor is selected after the submittal of an application, or where the general contractor changes, a new application must be, in accordance with Part I.B., submitted to the Agency at least 48 hours prior to when the general contractor begins work at the site.

B. PERMIT MODIFICATION

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

1. Violation of any terms of this permit;
2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
4. Minn. Rules pts. 7001.0170 and 7001.0180.

C. RIGHT OF ENTRY

The Permittee shall, pursuant to Section 308 of the Act and Minnesota Statutes 115.04, allow representatives of the; Agency, local permitting authorities, local soil and water conservation districts, or municipality which operates the storm sewer system, upon presentation of credentials:

1. To enter upon the Permittee's premises where the construction activity is occurring for the purpose of obtaining information, examination of records, conducting surveys or investigations;
2. To bring such equipment upon the Permittee's premises as is necessary to conduct such surveys and investigations;
3. To examine and copy any books, papers, records, or memoranda pertaining to the storm water discharge.
4. To sample and monitor any substances or parameters at any location.

D. CIVIL AND CRIMINAL LIABILITY

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance with the terms and conditions provided herein.

E. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the installation of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Section 311 or the Act and Minn. Stat. chs. 115 and 116, as amended.

F. LIABILITY EXEMPTION

This permit authorizes the Permittee to perform the activities described herein within the conditions set forth. In issuing this permit, the State/Agency assumes no responsibility for any damage to persons, property or the environment caused by the activities authorized or undertaken pursuant to this permit. To the extent the state/agency may have any liability for the activities of its employees, that liability is explicitly limited to that provided in the Torts Claim Act, Minn. Stat. § 3.736.

G. MINNESOTA LAWS

Nothing in this permit shall be construed to preclude the installation of any legal or administrative proceedings or relieve the Permittee from any responsibilities, liabilities, or penalties for violation of effluent and water quality limitations not included in this permit or applicable laws or regulations.

H. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

I. SEVERABILITY

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

J. NPDES/SDS RULE

The Permittee shall comply with the provisions of Minn. Rules pts. 7001.0150, subp. 3 and 7001.1090, subp. 1.A,B,C,H,I. This permit does not require the submittal of a data monitoring report.

K. OTHER STATUTES, RULES AND ORDINANCES

The Agency's issuance of a permit does not release the Permittee from any liability, penalty or duty imposed by Minnesota or federal statutes or local ordinances, except the obligation to obtain the permit.

L. MORE STRINGENT RULES

The Agency's issuance of a permit does not prevent the future adoption by the Agency of pollution control rules, standards, or orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards or orders against the Permittee.

M. AGENCY OBLIGATION

The Agency's issuance of a permit does not obligate the Agency to enforce local laws, rules or plans beyond that authorized by Minnesota Statutes.

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SECTION 02220

DEMOLITION

PART 1 GENERAL

1.1 REFERENCES

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

ENGINEERING MANUALS (EM)

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

1.2 GENERAL REQUIREMENTS

The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris. Rubbish and debris shall be removed from Government property daily, unless otherwise directed, to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer. In the interest of occupational safety and health, the work shall be performed in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections. In the interest of conservation, salvage shall be pursued to the maximum extent possible; salvaged items and materials shall be disposed of as specified.

1.2.1 Items to be Removed

This section applies to the removal and disposal of the handrail, guardrail, and bituminous pavement as indicated on the drawings. Removal and disposal of deteriorated concrete is covered in SECTION 03900 HORIZONTAL AND VERTICAL CONCRETE SURFACE REPAIRS.

1.3 MEASUREMENT AND PAYMENT

1.3.1 Handrail, Remove and Dispose

The work associated with the removal and disposal of the handrail will not be measured for separate payment and will be paid for on a lump sum basis complete.

1.3.2 Guardrail, Remove and Reinstall

The work associated with the removal and reinstallation of the guardrail will not be measured for separate payment and will be paid for on a lump

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sum basis complete.

1.3.3 Bituminous Pavement

Removal of existing bituminous pavement will be measured by the square yard - inch (SI) which is the measured surface area of bituminous pavement removal in square yards multiplied by the thickness of the bituminous pavement in inches.

1.4 SUBMITTALS

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

SD-08 Statements

Work Plan; GA.

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, including procedures and methods to provide necessary supports, lateral bracing and shoring when required, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1.

1.5 PROTECTION

1.5.1 Protection of Existing Property

Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The Contractor shall take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government; any damaged items shall be repaired or replaced as approved by the Contracting Officer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 EXISTING STRUCTURES

Existing features shall be removed and disposed of or removed and

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reinstalled as indicated on the drawings.

3.2 DISPOSITION OF MATERIAL

Title to material and equipment to be demolished, except Government salvage and historical items, is vested in the Contractor upon receipt of notice to proceed. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

3.2.1 Salvageable Items and Material

Contractor shall salvage items and material to the maximum extent possible.

3.2.1.1 Material Salvaged for the Contractor

Material salvaged for the Contractor shall be stored as approved by the Contracting Officer and shall be removed from Government property before completion of the contract. Material salvaged for the Contractor shall not be sold on the site.

3.2.1.2 Items Salvaged to be Reinstalled

Salvaged items to remain the property of the Government and to be reinstalled include the guardrail. The guardrail shall be removed and stored in a manner to prevent damage. Items damaged during removal or storage shall be repaired or replaced to match existing items.

3.2.2 Unsalvageable Material

Concrete, masonry, and other noncombustible material, except concrete permitted to remain in place, shall be disposed of in accordance with SECTION 01410 Environmental Protection.

3.3 CLEAN UP

Debris and rubbish shall be removed from basement and similar excavations. Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

3.4 PAVEMENTS

Existing pavements designated for removal shall be saw cut and removed in accordance with the details shown on the drawings.

-- End of Section --

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SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 117	(1995) Materials Finer Than 75 Micrometers (No. 200 Sieve) in Mineral Aggregates by Washing
ASTM C 136	(1996) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 698	(1991) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³) (600 KN-m/m ³)
ASTM D 1556	(1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2487	(1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	(1993) Description and Identification of Soils
ASTM D 2922	(1996) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

1.2 MEASUREMENT AND PAYMENT

1.2.1 Excavation

The unit of measurement for excavation will be the cubic yard, computed by the average end area method from cross sections taken before the excavation is started and after the excavation is completed and finished grade lines

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are established. The volume to be paid for will be the number of cubic yards of material measured in its original position and removed from the excavation, between the original ground line and the finished grade lines. Finished grade lines are established by the top of the riprap, top of the topsoil, or finished surface of the channel. Payment will constitute full compensation for all labor, equipment, tools, supplies, and incidentals necessary to complete the work. Excavation will be paid for at the contract unit prices per cubic yard for excavation. The measurement will not include:

- (1) the volume of subgrade material or other material that is scarified or plowed and reused in-place,
- (2) the volume excavated without authorization or the volume of any material used for purposes other than directed,
- (3) the volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade,

1.2.2 Backfill

Backfill is defined as the Select Granular Fill and Granular Fill materials. Backfill will be measured for payment by the cubic yard, in place, using the average-end-area method based on the stripping and excavation lines shown, modified to include authorized overdepth excavation, and the final lines, grades, and sections shown with the limitations or exceptions indicated below. Payment will constitute full compensation for all labor, equipment, tools, supplies, and incidentals necessary to complete the work. Backfill will be paid for at the contract unit prices per cubic yard for backfill.

1.2.2.1 Limitations or Exceptions

The following limitations or exceptions apply to the measurement and payment of the items indicated above.

- (1) Tolerances are provided only for the convenience of the Contractor and no material placed outside of the lines, grades, and sections shown as a result of the permitted tolerances will be measured for payment.
- (2) Volumes occupied by structures will not be included in measurement of fill or embankment quantities.

1.3 SUBMITTALS

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

SD-09 Reports

Testing; FIO.

A summary of testing results indicated in PARAGRAPH: TESTING shall be

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submitted when the site work is substantially complete.

PART 2 PRODUCTS

2.1 DEFINITIONS

2.1.1 Satisfactory Materials

Material placed as fill or backfill shall consist of material classified by ASTM D2487 as GW, GP, GC, GM, SP, SM, SC, CL AND SW. The material shall be free of ice, snow, frozen earth, trash, debris, sod, roots, organic matter, or stones larger than 3 inches in any dimension. All materials shall be of a character and quality satisfactory for the purpose intended.

2.1.2 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

2.2 MATERIALS

2.2.1 Select Granular Fill

Select granular material shall be satisfactory material and shall consist of material classified by ASTM D2487 as SP or SW with 100 percent by weight of material passing the No. 4 sieve and with less than 4 percent by weight of material passing the No. 200 sieve.

2.2.2 Granular Fill

Granular material shall be satisfactory material and shall consist of material classified by ASTM D2487 as SP, SW, or SP-SM with 100 percent by weight of material passing the No. 4 sieve and with less than 12 percent by weight of material passing the No. 200 sieve.

2.3 CONSTRUCTION EQUIPMENT

Compaction equipment shall consist of sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil type being compacted. Water flooding or jetting methods of compaction will not be permitted for any soil types. Sprinkling equipment for cohesive soils shall apply water uniformly, in controlled quantities, and be capable of variable application widths.

PART 3 EXECUTION

3.1 CLASSIFICATION OF SOIL MATERIALS

Classification of soil materials shall be performed by the Contractor in accordance with ASTM D 2488. The Contracting Officer reserves the right to revise the Contractor classifications. In the case of disagreement, the

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Contracting Officer's classification will govern unless the soils are classified in accordance with ASTM D 2487. All testing completed by the Contractor in conjunction with soil material classification will be considered incidental to the contract work.

3.2 STOCKPILES

Stockpiles of satisfactory material shall be placed and graded as specified. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed. Excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government.

3.3 GENERAL EXCAVATION

Excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades indicated. Excavation material suitable for use as fill shall be transported to and placed in fill areas within the limits of the work. All unsatisfactory material, including any soil which is disturbed by the Contractor's operations or softened due to exposure to the elements and water, and surplus material shall be disposed of in areas approved for off site storage. In the event that it is necessary to remove unsatisfactory material to a depth greater than specified, the Contracting Officer shall be notified prior to removal of unsatisfactory material and an adjustment in the contract price will be considered in accordance with the contract. Excavations carried below the depths indicated shall be refilled to the proper grade with satisfactory material. Additional work not authorized by the Contracting Officer shall be at the Contractor's expense. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be excavated from the borrow areas indicated or from other approved areas selected by the Contractor as specified.

3.4 BORROW MATERIAL

Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from approved sources, either private or within the limits of the project site, selected by the Contractor. Excavated material may be used for backfill if it meets the material properties for the backfill material specified in this section. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, pay royalties and other charges involved, and bear the expense of developing the sources, including rights-of-way for hauling. Borrow material from approved sources on Government-controlled land may be obtained without payment of royalties. Unless specifically provided, no

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borrow shall be obtained within the limits of the project site without prior written approval. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation.

3.4.1 Excavation and Borrow Pits

Except as otherwise permitted, borrow pits and other excavation areas shall be excavated providing adequate drainage. Overburden and other spoil material shall be transported to designated spoil areas or otherwise disposed of, or used for special purposes. Borrow pits shall be neatly trimmed and drained after the excavation is completed. The Contractor shall ensure that excavation of any area, operation of borrow pits, or dumping of spoil material results in minimum detrimental effects on natural environmental conditions.

3.4.2 Utilization of Excavated Materials

Satisfactory material removed from excavations shall be used, insofar as practicable, in the construction of fills, subgrades, bedding (as backfill), and for similar purposes if it meets the specified material properties indicated in this section. No satisfactory excavated material shall be wasted without specific written authorization. Material authorized to be wasted shall be stored in designated areas approved for surplus material storage and disposed of offsite. No excavated material shall be disposed of in such a manner as to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

3.5 BACKFILL

Backfill shall be constructed at the locations and to lines and grades indicated using select granular fill or granular fill as indicated. The material shall be placed in successive horizontal layers for the full width of the cross section and shall be compacted as specified. Each layer shall be compacted before the overlaying lift is placed.

3.6 FINISHING

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches and gutters shall be finished to permit adequate drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing.

3.6.1 Pavement Subgrade Tolerances

When the final layer of base has been completed, and at the time any additional construction is to be placed thereon, the finished surface of the base shall not vary more than 0.05 feet from the plan elevation.

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3.7 PLACING TOPSOIL

Topsoil placement is covered in SECTION: ESTABLISHMENT OF TURF. The finished grade shall be such that after subsequent treatment (tillage, topsoiling and planting) the planted grade shall join 1 inch below adjoining surfaced grade of walks, curbs and drives and even with adjoining turfed areas.

3.8 COMPACTION

3.8.1 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 698. The maximum density is hereafter abbreviated as the "Standard Proctor" value.

3.8.2 Moisture Control

Control of moisture in the fill shall be maintained to provide acceptable compaction. Dried or crusted cohesive soils shall be plowed, disked or otherwise broken up before compaction. If water is added to fills, the layer shall be spread in even lifts, moistened as necessary, thoroughly mixed, and compacted.

3.8.3 Placement And Compaction

Each layer shall be spread uniformly on an acceptable soil surface. The type of fill, its maximum uncompacted lift thickness, and the minimum compaction requirements (Percent of Standard Proctor density) to which each type of fill shall be compacted shall be as listed below.

<u>Fill Zone</u>	<u>Maximum Uncompacted Lift Thickness (inches)</u>	<u>Percent of Standard Proctor Density</u>
Select Granular Fill	12	95
Granular Fill	12	95

a. Satisfactory materials shall be place in horizontal layers not exceeding 6 inches loose depth when hand operated compactors are used.

b. Embankments and subgrade under pavements shall be compacted to at least the Percent of Standard Proctor density as follows:

(1) For fill sections the top 36 inches below the aggregate base course shall be placed in uncompacted lifts not exceeding 9 inches and compacted to at least 100 Percent of the Standard Proctor density.

(2) For cut sections in cohesionless soils the subgrade surface shall be compacted to at least 100 Percent of the Standard Proctor density. For cut sections in cohesive soils, the subgrade shall

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be proof rolled and any soft areas shall be brought to the Contracting Officer's attention.

3.9 TESTING

3.9.1 General

All testing expenses shall be the Contractor's responsibility. Prior to sampling and testing the work, testing laboratories shall be inspected and approved in accordance with SECTION 01451: CONTRACTOR QUALITY CONTROL. The Contracting Officer reserves the right to direct the location and select the material for samples to be tested and to direct where and when moisture-density tests shall be performed.

3.9.2 Transmittal

The Contracting Officer shall be informed of test results daily for direction on corrective action required. Draft copies of field testing results shall be submitted to the Contracting Officer on a frequent and regular basis, as directed.

3.9.3 Corrective Action

Tests of materials which do not meet the contract requirements (failing test) will not be counted as part of the required testing. Each such failing test must be retaken at the same location as the failing test was taken. If testing indicates material does not meet the contract requirements, the material represented by the failing test shall not be placed in the contract work or shall be recompacted or removed. The quantity of material represented by the failing test shall be determined by the Contracting Officer up to the quantity represented by the testing frequency. The Contractor may increase testing frequency in the vicinity of a failing test in order to reduce removal requirements, as approved by the Contracting Officer. Such increases in testing frequency shall be at the Contractor's expense and at no additional cost to the Government.

3.9.4 Testing Schedule

- a. Moisture-Density Relations (ASTM D 698)
 - (1) Select Granular Fill, 1 test for each material variation.
 - (2) Granular Fill, 1 test for each material variation.
- b. In-Place Densities (ASTM D 1556 or ASTM D 2922)
 - (1) Select Granular Fill, 4 tests
 - (2) Granular Fill, 6 tests
- c. Percent Passing No. 200 sieve (ASTM C 117)
 - (1) Select Granular Fill, 3 tests, not less than 1 test from each source

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- (2) Granular Fill, 3 tests, not less than 1 test from each source
- d. Sieve Analysis, (ASTM C 136)(sieve sizes #4, #10, #40, #100, and #200)

- (1) Select Granular Fill, 3 tests, not less than 1 test from each source

- (2) Granular Fill, 3 tests, not less than 1 test from each source

3.10 NUCLEAR DENSITY TESTING EQUIPMENT

Nuclear density testing equipment shall be used in general accordance with ASTM D 2922 and ASTM D 3017. In addition, the following conditions shall apply:

- a. Prior to using the nuclear density testing equipment on the site, the Contractor shall submit to the Contracting Officer a certification that the operator has completed a training course approved by the nuclear density testing equipment manufacturer, the most recent data sheet from the manufacturer's calibration, and a copy of the most recent statistical check of the standard count precision.
- b. The first test and every tenth test thereafter shall include a sand cone correlation test. The sand cone test shall be centered over the prepared surface for the nuclear test, shall include a nominal 6 inch diameter sand cone, and shall include a minimum wet soil weight of 6 pounds extracted from the hole. In addition, testing of aggregate base soils shall include a minimum of 3 sand cone correlations for each day of testing; and testing of bituminous shall include a minimum of 3 core densities for each day of testing. The density correlations shall be submitted with test results. Each transmittal including density test data shall include a summary of all density correlations for the job neatly prepared on a summary sheet including at a minimum:
 - (1) meter serial number and operators initials.
 - (2) standard count for each test.
 - (3) material type.
 - (4) probe depth.
 - (5) moisture content by each test method and the deviation.
 - (6) wet density by each test method and the deviation.
- c. The nuclear density testing equipment shall be capable of extending a probe 6 inches minimum down into a hole.
- d. Nuclear density testing equipment used within 2 vertical feet from the existing ground water level, 5 horizontal feet from a vertical wall or massive concrete structure, or in a trench shall have the standard count changed before and after each test.
- e. Nuclear density testing equipment shall not be used during rain.

3.11 SUBGRADE AND EMBANKMENT PROTECTION

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Compacted subgrades that are disturbed by the Contractor's operations or adverse weather shall be scarified and compacted as specified herein to the required density prior to further construction thereon. Subgrades not meeting the specifications for finish, material type and density at the time of surface material placement shall be corrected at the Contractor's expense. Cohesive embankments and subgrades shall be kept crowned or sloped for drainage. Newly graded areas shall be protected from traffic and erosion. Any settlement or washing away that may occur from any cause shall be repaired. No base course or pavement shall be laid until the subgrade has been checked and approved by the Contracting Officer. Ditches and drains along subgrade shall be maintained to provide effective drainage. All work shall implement best management practices for erosion control.

-- End of Section --

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SECTION 02370

STONE PROTECTION

PART 1 GENERAL

1.1 SUBMITTALS

The following shall be submitted in accordance with SECTION: SUBMITTAL PROCEDURES.

SD-01 Data

Geotextile Data.; FIO.

Catalog cuts or technical data sheet shall be submitted for the geotextile showing that the product meet the specifications.

Test Results.; FIO.

Gradation Test Results as specified in Paragraph: TESTS FOR GRADATION AND SHAPE.

SD-05 Statements

Material Sources; GA.

Material Sources as specified in Paragraph: SOURCES AND EVALUATION.

1.2 MEASUREMENT AND PAYMENT

1.2.1 Riprap Measurement

Riprap placed upstream of the structure as replacement for riprap removed to facilitate construction of the sheet pile cofferdam will not be measured for payment and all costs shall be included in the bid price for the item to which the work pertains.

All other riprap placed upstream or downstream of the structure as determined by the survey and directed by the Contracting Officer will be measured for payment. Riprap shall be weighed on accurate, approved scales furnished or made available by the Contractor. Before being approved for use, the scales shall have been tested by the Department of Weights and Measures or by a reliable scale servicing company so as to operate within a degree of error not greater than 1 percent and to be sensitive to a change in load of 1/5 of 1 percent, both percentages being based on the total required weight of material normally weighed as a unit on the scale. Each load shall be accompanied by a delivery ticket certified by the weighmaster. As a minimum, each ticket shall contain the following information:

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- (1) Date and time.
- (2) Vehicle number.
- (3) Gross weight.
- (4) Vehicle tare weight.
- (5) Net weight.
- (6) Job total for material weighed.
- (7) Signature of weighmaster.

Delivery tickets shall be collected by the Contractor, and copies thereof shall be furnished to the Contracting Officer.

1.2.2 Riprap Payment

Payment will be by the ton (TN)(2,000 pounds avoirdupois) of material acceptably placed within the tolerances specified. Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified.

1.2.3 Geotextile Measurement and Payment

Geotextile will not be measured for payment and all costs shall be included in the price bid for the item to which the work pertains.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Riprap

Riprap gradation shall meet the requirements for R45 riprap indicated on the attached FORM 4055. The stone shall be well graded within the limits specified and shall be free from cracks, seams, and other defects that would unduly increase its deterioration from natural causes. Neither the breadth nor thickness of any piece of stone shall be less than one-third of its length. If occasional pieces of stone are observed during placement that are slightly larger than the maximum weight, the material may be permitted provided the gradation tests meet the specifications, the voids are not unduly affected, and surface tolerances are met. Stone for riprap shall have a specific gravity not less than 2.55.

2.1.2 Geotextile

Geotextile shall meet the following requirements.

GEOTEXTILE FABRIC MATERIAL PROPERTIES

PROPERTY	REQUIREMENTS	TEST METHOD
Grab Strength(N)	890(200 lb)	ASTM D 4632
Elongation(%)	15	ASTM D 4632
Seam Strength(N)	800(180 lb)	ASTM D 4632
Puncture Strength(N)	356(80 lb)	ASTM D 4833

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GEOTEXTILE FABRIC MATERIAL PROPERTIES

PROPERTY	REQUIREMENTS	TEST METHOD
Burst Strength(kPa)	2206(319 psi)	ASTM D 3787
Trapezoidal Tear(N)	222(50 lb)	ASTM D 4533
Ultraviolet De.(%)	70	ASTM D 4355
AOS	#70 sieve to #100 sieve	
permittivity	$\geq 0.1 \text{ sec}^{-1}$	
Woven Monofilament Geotextiles, POA	$\geq 4\%$	
Nonwoven Geotextile, porosity	$\geq 50\%$	
No slit film geotextile allowed		

2.2 SOURCES AND EVALUATION

Stone materials shall be produced from the sources listed in the SECTION: ATTACHMENTS. Quarried rock supplied shall be produced from one rock formation to provide a product of uniform appearance. Field stone can be used. The Contractor shall not supply rock from various formations, or mix field stone with quarried rock, unless approved by the Contracting Officer.

2.2.1 Alternate Sources

If the Contractor proposes to furnish materials from a source not listed, the Government Geologist will make such investigations and evaluations as necessary to determine whether or not materials meeting the requirements of this project can be produced from the proposed source. Sources from which Contractor proposes to obtain the materials shall be selected and submitted for approval at least 30 days in advance of the time when the material will be required in the work.

2.3 TESTS FOR GRADATION AND SHAPE

2.3.1 Production Methods

The Contractor shall state in writing methods of processing and handling samples, and shall notify the Contracting Officer when production methods are changed.

2.3.2 Riprap

2.3.2.1 General Requirements

Gradation tests shall be performed by the methods and at the frequency listed below. Gradation testing results shall be submitted on the WORKSHEET FOR GRADATION ANALYSIS OF RIPRAP and the gradation curve (form 4055). A blank copy of each form is included at the end of this section. The Contracting Officer shall direct the time and location of sampling, unless waived. The Contracting Officer shall be informed 24 hours before each test is performed. All tests, including failing tests shall be submitted. The Contracting Officer shall be informed immediately of test results and draft copies of test results shall be furnished at the Contracting Officers request. Tests performed on material which do not meet gradation and shape requirements will not be counted as part of the tests required.

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2.3.2.2 Test Method A

Test method A shall consist of weighing all stones larger than 5 pounds in a sample. Five to seven weight classes shall be selected within the range of stone sizes. Each stone shall be weighed and recorded on the worksheet for method A. The weight of stones shall be summed for each weight class; after which calculations and a plot of the gradation shall be completed in accordance with accepted practice for soil and aggregate gradations.

2.3.2.3 Test Method B

Test method B shall consist of separating the stones into 5 to 7 piles, ordered by size. The sample shall be separated on a clean, hard surface that is free of smaller stones that could become mixed with the sample. The stones shall be visually screened to place them into appropriate piles. All stones shall be separated and placed into a pile before weighing. After separating, the smallest and largest rock in each pile shall be weighed and recorded. The stones shall be adjusted as necessary so that the weight classes do not overlap. After adjustment is adequate and weight classes have been established, each pile of stone shall be weighed and recorded on the worksheet for method B. Calculations and a plot of the gradation shall be completed in accordance with accepted practice for soil and aggregate gradations.

2.3.2.4 Scales

Scales shall be accurate to, and shall have resolution to the nearest 0.5 pounds, or to the nearest 1% of the material be weighted.

2.3.2.5 Testing

One sample shall be obtained from the quarry and tested in accordance with either method A or B. A satisfactory test shall be obtained prior to any hauling and delivery of riprap. Samples shall be taken from stockpiles or loaded trucks, and not directly from conveyers or chutes. The Contracting Officer shall direct the sample location unless waived. The sample shall have a minimum gross weight of 2000 pounds.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 Tolerances

Where tolerances are shown or specified, plus shall be above lines and grades, and minus shall be below lines and grades.

3.2 PLACEMENT OF GEOTEXTILE

Geotextile fabric shall be laid flat but not stretched on the soil.

3.3 PLACEMENT OF RIPRAP

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3.3.1 General Placement

Riprap shall be placed to the elevations indicated in one operation and in such a manner as to avoid displacing the underlying material. The riprap layer shall generally be placed from slope toe to crest. Placing riprap in layers shall not be permitted. No heavy equipment shall operate on the riprap surface. Placing riprap by dumping into chutes or similar methods likely to cause segregation will not be permitted. The finished mass shall be free from pockets of small stones, clusters or larger stones and excessive voids.

3.3.2 Requirements

Place riprap upstream of the structure in the areas where riprap was removed to facilitate construction of the sheet pile cofferdam. Riprap placed in this area shall be placed on a geotextile fabric. Place riprap downstream of the structure in the wet condition. Place riprap in other areas and at the thicknesses as directed by the Contracting Officer.

3.3.3 Riprap Placed in Surveyed Areas

The Contractor shall conduct a survey upstream and downstream of the dam as follows. Replace missing riprap to the elevations shown on reference drawings numbers R13-P-40/1.1, R13-P-40/2.1, and R13-P-64/4.

Downstream. The survey shall consist of 2 lines, parallel to the end of the spillway, with one line 8 feet from the end of the spillway and one line 15 feet from the end of the spillway, taking measurements at 5 foot intervals and at break points.

Upstream. The survey shall consist of 2 lines, parallel to the upstream edge of the piers, with one line 1 foot from the end of the edge of the piers and one line 8 feet upstream from the edge of the piers, taking measurements at 5 foot intervals and at break points.

3.3.4 Riprap Placement on Geotextile

Riprap shall be placed over the geotextile by methods that do not tear, puncture, or reposition the fabric. Equipment shall be operated so as to minimize the drop height of the stone without contacting and damaging the geotextile. Generally this will be about 1 foot of drop from the bucket to the placement surface. Riprap shall be placed so that stones do not roll downhill.

3.3.5 Riprap Placement in Water

Riprap to be placed under water shall be placed in a systematic manner so as to ensure a continuous uniform layer of well-graded stone of the required thickness. Stone to be placed under water shall not be cast across the surface of the water.

3.3.6 Riprap Surface Tolerances

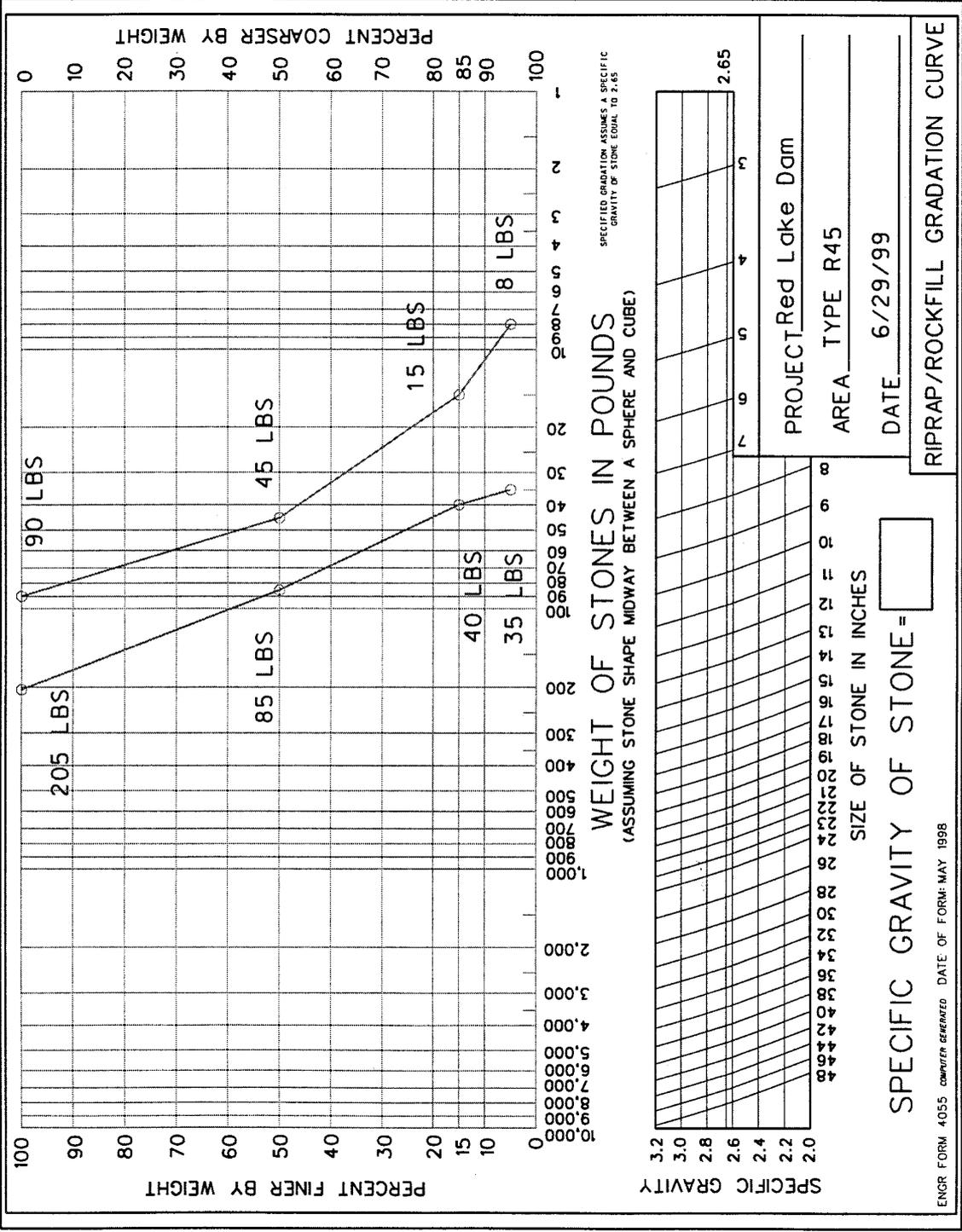
Riprap shall be constructed to the lines and grades shown or established

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within a tolerance of 6 inches above and 3 inches below the prescribed grade. Surface tolerances for riprap continuous over an area greater than 200 square feet shall be 3 inches above to 1 inch below the prescribed grade.

-- End of Section --

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SPECIFIC GRAVITY OF STONE =

WORK SHEET FOR GRADATION ANALYSIS OF RIPRAP METHOD B

Project Name:	Date:
Riprap Type:	Test No.
Source, Quarry, or Pit:	
Sample Location:	Test Made By:

Part 1. Separate rock into 5 to 7 piles, ordered by size. The largest pile should contain 2 to 5 stones. Intermediate piles between the largest stones and those smaller than 5 pounds should be approximately equal in total weight. Separate all stones before weighing.

Part 2. Summary Table.

(1) WEIGHT CLASSES		(2)	(3)	(4)
PASSING (stone wt. in lbs.)	RETAINED (stone wt. in lbs.)	TOTAL WEIGHT EACH CLASS (lbs.)	CUMMULATIVE WEIGHT PASSING (lbs.)	TOTAL PERCENT PASSING (%)
	5 lbs.			
5 lbs.	PAN			
SAMPLE TOTAL			-----	-----

Column (1) Weigh the smallest and largest stone in each pile. If weight classes overlap, adjust stones as necessary and repeat.
 Column (2) Weigh the total amount of rock in each pile and record.
 Column (3) Add column (2) from bottom up to get cumulative weight passing.
 Column (4) Divide column (3) by sample total to get total percent passing.

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SECTION 02464

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-- End of Section Table of Contents --

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SECTION 02464

METAL SHEET PILING

PART 1 GENERAL

1.1 SCOPE

This section covers the sheet piling used for the tie back dead man anchors.

1.2 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 6/A 6M (1995b) General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

ASTM A 328/A 328M (1993a) Steel Sheet Piling

1.3 UNIT PRICES

1.3.1 Steel Sheet Piling for Deadman Anchors

1.3.1.1 Payment

Payment for furnished and installed sheet piling is included in the lump sum price bid for Anchor System. Payment shall cover all cost of furnishing, handling, storing and installing piling including placing, driving, cutting holes and other materials and work incident thereto.

1.3.1.2 Measurement

Sheet piling will not be measured for payment.

1.3.2 Steel Sheet Piling for Upstream Cofferdam

1.3.2.1 Payment

Payment for furnished and installed and removed sheet piling is included in the lump sum price bid for Structure Dewatering. Payment shall cover all cost of furnishing, handling, storing and installing piling including placing, driving, cutting holes and other materials and work incident thereto.

1.3.2.2 Measurement

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Sheet piling will not be measured for payment.

1.4 SUBMITTALS

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

Materials Tests; FIO.

Certified materials tests reports showing that sheet piling and appurtenant metal materials meet the specified requirements shall be submitted for each shipment and identified with specific lots prior to installing materials. Material test reports shall meet the requirements of ASTM A 6/A 6M.

1.5 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 PRODUCTS

2.1 METAL SHEET PILING

Metal sheet piling shall be hot-rolled steel sections conforming to ASTM A 328/A 328M, or cold-formed steel sections formed from hot-rolled steel meeting the chemical and mechanical requirements of ASTM A 328/A 328M. The interlocks of sheet piling shall be free-sliding, provide a swing angle suitable for the intended installation. Sheet piling shall have a section modulus per foot of wall of not less than 30.2 inches cubed and shall have a web thickness of not less than 3/8 inch.

2.2 APPURTENANT METAL MATERIALS

Metal plates, shapes, bolts, nuts, rivets and other appurtenant fabrication and installation materials shall conform to manufacturer's standards and to the requirements specified in the respective sheet piling standards and in Section 05502 MISCELLANEOUS METAL MATERIALS, STANDARD ARTICLES, AND SHOP FABRICATED ITEMS.

2.3 TESTS, INSPECTIONS, AND VERIFICATIONS

2.3.1 Materials Tests

Materials tests shall conform to the following requirements. Sheet piling and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property

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requirements prior to delivery to the site. Testing of sheet piling for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of sheet piling shall meet the requirements of ASTM A 6/A 6M.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Placing and Driving

3.1.1.1 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. Pilings shall be placed plumb with out-of-plumbness not exceeding 1/8 inch per foot of length and true to line. Temporary wales, templates, or guide structures shall be provided to insure that the pilings are placed and driven to the correct alignment. Pilings properly placed shall be interlocked throughout their length with adjacent pilings to form a continuous diaphragm throughout the length or run of piling wall.

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SECTION 02620

SUBDRAINAGE SYSTEM

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 227/A 227M	(1993) Steel Wire, Cold-Drawn for Mechanical Springs
ASTM A 229/A 229M	(1993) Steel Wire, Oil-Tempered for Mechanical Springs
ASTM C 425	(1998) Compression Joints for Vitrified Clay Pipe and Fittings
ASTM C 700	(1997) Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM D 2751	(1996a) Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings
ASTM D 3034	(1998) Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM D 3212	(1996a) Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

1.2 SUBMITTALS

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

SD-01 Data

Transition Couplings, Tee; GA.

Descriptive data indicating materials, sizes, dimensions, and other descriptive information.

SD-13 Certificates

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Pipe for Subdrains; FIO.

Certifications from the manufacturers attesting that materials meet specification requirements. Certificates are required for drain pipe, drain tile, fittings.

1.3 DELIVER, STORAGE, AND HANDLING

1.3.1 Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with minimum handling. Materials shall not be stored directly on the ground. The inside of pipes and fittings shall be kept free of dirt and debris. During shipment and storage, filter fabric shall be wrapped in burlap or similar heavy duty protective covering. The storage area shall protect the fabric from mud, soil, dust, and debris. Filter fabric materials that are not to be installed immediately shall not be stored in direct sunlight. Plastic pipe shall be installed within 6 months from the date of manufacture unless otherwise approved.

1.3.2 Handling

Materials shall be handled in such a manner as to insure delivery to the trench in sound undamaged condition. Pipe shall be carried and not dragged to the trench.

1.4 MEASUREMENT AND PAYMENT

1.4.1 Subdrain Repair

All work necessary to complete the subdrain repair including all labor, equipment, materials, excavation and backfill will not be measured for separate payment and all costs shall be included in the lump sum price bid for the items to which the work pertains. No extra payment will be made for filter gravel materials used in the subdrain repair or for filter gravel materials disturbed and replaced as a result of other construction operations.

PART 2 PRODUCTS

2.1 PIPE FOR SUBDRAINS

Pipe for subdrains shall be of the types and sizes indicated.

2.1.1 Clay Pipe and Perforated Clay Pipe

2.1.1.1 Clay Pipe

Clay pipe shall be either standard or extra strength as indicated and shall conform to ASTM C 700.

2.1.1.2 Perforated Clay Pipe

Perforated clay pipe shall be either standard or extra strength as

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indicated and shall conform to ASTM C 700. Plain-end pipe conforming to the strength and perforation requirements of ASTM C 700 will also be acceptable if provided with spring wire clips of approved type to maintain a taut but elastic joint between the sections of pipe when laid. Clips shall be constructed of not smaller than No. 9 hard-drawn or oil-tempered steel wire conforming to ASTM A 227/A 227M or ASTM A 229/A 229M, and shall be coated with an approved rust preventive coating. Wire clips shall withstand 25 cycles of alternate loading and unloading using a stressing force of 125 pounds. The permanent set resulting from this test shall be less than 5 percent, based on the original length of the fastener. Compression joints conforming to ASTM C 425 will also be acceptable.

2.1.2 Plastic Pipe

Plastic pipe shall contain ultraviolet inhibitor to provide protection from exposure to direct sunlight.

2.1.2.1 Acrylonitrile-Butadiene-Styrene (ABS) Piping

Acrylonitrile-butadiene-styrene (ABS) piping and fittings shall conform to ASTM D 2751, with maximum SDR of 35.

2.1.2.2 Polyvinyl Chloride (PVC) Pipe and Fittings

Polyvinyl chloride (PVC) pipe and fittings shall conform to ASTM D 3034.

2.1.2.3 Pipe Perforations

Circular Perforations in Plastic Pipe: Circular holes shall be cleanly cut not more than 5/16 inch or less than 3/16 inch in diameter and arranged in rows parallel to the longitudinal axis of the pipe. Perforations shall be approximately 3 inches center-to-center along rows. The rows shall be approximately 1-1/2 inches apart and arranged in a staggered pattern so that all perforations lie at the midpoint between perforations in adjacent rows. The rows shall be spaced over not more than 155 degrees of circumference. The spigot or tongue end of the pipe shall not be perforated for a length equal to the depth of the socket, and perforations shall continue at uniform spacing over the entire length of the pipe.

2.2 Transition Couplings

Transition couplings used to connect pipes of different materials and different diameters shall be suitable for the intended purpose, designed and sized to accommodate the different outside pipe diameters, and shall be the standard product of a reputable manufacturer whose normal business is the production of such transition (or reducing) couplings. The couplings shall produce a watertight connection using compounded rubber gaskets fabricated of all new materials with ingredients to produce superior storage characteristics, performance and resistance to set after installation. Components of the transition couplings shall include steel sleeves and ductile iron followers with bolted connections.

2.3 FILTER GRAVEL

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Filter gravel shall be washed sand, sand and gravel, crushed stone, crushed stone screenings, or slag composed of hard, tough, durable particles free from adherent coatings. Filter gravel shall not contain corrosive agents, organic matter, or soft, friable, thin, or elongated particles and shall be evenly graded between the limits specified in TABLE I. Gradation curves will exhibit no abrupt changes in slope denoting skip or gap grading. Filter gravel shall be clean and free from soil and foreign materials. Filter gravel blankets found to be dirty or otherwise contaminated shall be removed and replaced with material meeting the specific requirements, at no additional cost to the Government.

TABLE I. FILTER GRAVEL GRADATION

<u>Sieve Designation</u>	<u>Percent by Weight Passing</u>
1 inch	100
3/4 inch	85 - 100
3/8 inch	30 - 60
#4	0 - 10

(MnDOT 3149.2H Course Filter Aggregate)

PART 3 EXECUTION

3.1 SUBDRAIN REPAIR

The location of the damaged subdrain is indicated on the drawings. The extent of the damage is unknown and can not be determined until the area is excavated and inspected. For bidding purposes it is to be assumed that the tee connecting the 8 inch vitrified clay pipe to the 8 inch galvanized steel pipe is broken and needs to be replaced with a new tee and associated transition couplings. If inspection reveals other damage, the contract will be adjusted in accordance with contract clause CHANGES.

3.2 EXCAVATION

Excavation shall be performed as necessary to expose the damaged subdrain components. During excavation, material satisfactory for backfilling shall be stockpiled in an orderly manner at a distance from the banks of the trench equal to 1/2 the depth of the excavation, but in no instance closer than 2 feet. Excavated material not required or not satisfactory for backfill shall be removed from the site. Unauthorized overexcavation shall be backfilled in accordance with paragraph BACKFILLING AND COMPACTION at no additional cost to the Government.

3.2.1 Removal of Unstable Material

Where unstable material is encountered in the bottom of the trench, such material shall be removed to the depth directed and replaced to the proper grade with select granular material as provided in paragraph BACKFILLING

AND COMPACTION. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced by the Contractor without additional cost to the Government.

3.2.2 Stockpiles

Stockpiles of satisfactory shall be placed and graded as specified. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment, excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government.

3.3 INSTALLATION OF FILTER FABRIC AND PIPE FOR SUBDRAINS

3.3.1 Installation of Pipe for Subdrains

3.3.1.1 Pipelaying

Each pipe shall be carefully inspected before it is laid. Any defective or damaged pipe shall be rejected. No pipe shall be laid when the trench conditions or weather is unsuitable for such work. Water shall be removed from trenches by sump pumping or other approved methods. The pipe shall be laid to the grades and alignment as indicated. The pipe shall be bedded to the established gradeline. Perforations shall be centered on the bottom of the pipe. Pipes of either the bell-and-spigot type or the tongue-and-groove type shall be laid with the bell or groove ends upstream. All pipes in place shall be approved before backfilling.

3.3.1.2 Jointings

- a. Nonperforated Concrete and Clay Pipe: Pipe shall be laid with 1/8 to 1/4 inch opening between the ends of the pipe or as required by spacing lugs constructed in the pipe. Mortar shall be placed in the joint at three points and pressed firmly into place to hold the pipe securely in line. The mortar shall be the full depth of the bell or groove and approximately 1 inch in width, and shall be located at the third points around the joint with the top point at the center of the pipe. The inside of the pipe shall be free of excess mortar.
- b. Perforated Concrete and Clay Pipe: The pipe shall be laid with closed joints with positive provision for centering each section of the pipe in the bell or groove of the previously placed section. Plain-end perforated clay pipe sections shall be securely fastened together with spring wire clips furnished by the pipe manufacturer.

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- c. Acrylonitrile-Butadiene-Styrene (ABS): Solvent cement or elastomeric joints for ABS pipe shall be in accordance with ASTM D 2751. Dimensions and tolerances shall be in accordance with TABLE II of ASTM D 2751.
- d. Polyvinyl Chloride (PVC) Pipe: Joints shall be in accordance with the requirements of ASTM D 3034, ASTM D 3212, or ASTM F 949.

3.4 BACKFILLING AND COMPACTION

Backfill material shall consist of material as required.

3.4.1 Filter Gravel

Where filter gravel around subdrains is disturbed during excavation, replace to dimensions as shown on reference drawing R13-P-40/6.1. Filter gravel shall be placed and compacted with approved tampers to the dimensions indicated and additional backfill shall be placed to a height of at least one foot above the pipe. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to ensure thorough compaction of the fill under the haunches of the pipe.

3.4.1.1 Final Backfill

The remainder of the trench shall be filled with material in accordance with the requirements in Section 02300 EARTHWORK control. Water flooding or jetting methods of compaction will not be permitted..

3.5 TESTS

3.5.1 Filter Gravel Gradation

A sieve analysis of the filter gravel shall be conducted and results submitted to the Contracting Officer prior to the placement of the filter gravel material. The test shall be in accordance with the requirements indicated in paragraph TESTING in Section 02300 EARTHWORK

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SECTION 02720

AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 REFERENCES

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

MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT)

MNDOT 3138 (1995)Aggregates for Surface and Base Course, Standard Specifications for Construction

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 117 (1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing

ASTM C 136 (1996a) Sieve Analysis of Fine and Coarse Aggregates

1.2 UNIT PRICES

1.2.1 Measurement

Aggregate base located beneath bituminous roads, parking lots and concrete curb and gutter will be measured for payment by the cubic yard (CY) in place, within neat lines and to the compacted thicknesses shown on the drawings. Aggregate base in other locations will not be measured for payment and shall be considered incidental to the bid item to which it pertains. No payment will be made for overfill due to surface or subgrade variations. Material wasted, unused, rejected, or used for the convenience of the Contractor will not be measured for payment.

1.2.2 Payment

Quantity of aggregate base course, as specified above, will be paid for at the contract unit price for aggregate base course, which will constitute full compensation for the construction and completion of the base course, including the furnishing of all other necessary labor and incidentals.

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1.3 SUBMITTALS

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

SD-08 Statements

Aggregate Sources; FIO.

Material sources as specified in Paragraph SOURCE AND SAMPLING.

SD-09 Reports

Testing; FIO.

Testing results as specified in Paragraph TESTING.

SD-14 Samples

Aggregate Samples; FIO.

Samples of aggregate as specified in Paragraph SOURCE AND SAMPLING.

PART 2 PRODUCTS

2.1 AGGREGATE BASE

MNDOT 3138, Class 5.

2.2 MATERIAL SOURCES

It shall be the responsibility of the Contractor to make its own investigations for a source of suitable materials and to make its own arrangements with the owners of the pits for procuring the required quantity of suitable material. Aggregate sources on private lands shall be conditioned in agreement with local laws or authorities. The Contractor shall designate in writing only one source or one combination of sources from which it proposes to furnish aggregate. A 50 pound sample shall be provided to the Contracting Officer. Approval of samples from a source of aggregate is not to be construed as approval of all materials from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels when such materials are unsuitable for aggregate as determined by the Contracting Officer. Materials produced from an approved source shall meet all the requirements of this section.

PART 3 EXECUTION

3.1 GENERAL

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Aggregate base course shall be constructed in accordance with the requirements of the referenced state standard specification sections unless specified otherwise.

3.1.1 Definitions

The term "Engineer" referenced in the state standard specifications shall mean the Contracting Officer.

3.2 EQUIPMENT

All plant, equipment, and tools used in the performance of the work will be subject to approval and shall be maintained in satisfactory working condition at all times. The equipment shall meet the requirements of the referenced state standard specification sections. The base course shall be compacted using a steel-wheeled roller, vibratory smooth drum roller, pneumatic-tired roller, unless other special compaction equipment is approved.

3.3 WEATHER LIMITATION

Base courses shall be placed when the atmospheric temperature is above 35 degrees F. Base shall not be constructed on subgrades that are frozen or contain frost. Areas of completed base course that are damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

3.4 STOCKPILING MATERIAL

Prior to stockpiling of material, storage sites shall be cleared and leveled by the Contractor. Materials obtained from different sources shall be stockpiled separately.

3.5 PREPARATION OF SUBGRADE

Prior to constructing the aggregate base course, the subgrade shall be cleaned of all foreign substances. Ruts or soft, yielding spots in the subgrade, areas having inadequate compaction, and deviations of the surface from the requirements specified shall be corrected by loosening and removing soft or unsatisfactory material and by adding satisfactory material with a consistency and texture similar to the surrounding subgrade, reshaping to line and grade, and recompacting to specified density requirements. The finished subgrade shall not be disturbed by traffic or other operations and shall be maintained by the Contractor in a satisfactory condition until the base course is placed.

3.6 PROOF-ROLLING

The subgrade shall be proof-rolled prior to placing aggregate base. Proof-rolling shall be scheduled at a time when the Contracting Officer can observe, unless waived. Proof-rolling shall be accomplished within the limits of the work by passing a loaded 25 ton dump truck or rubber tired heavy equipment over the entire subgrade at a slow rate of speed. Proof-rolling shall be observed by a qualified observer not riding in the

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vehicle. Soft or loose areas identified by the proof-rolling and occurring in previously placed fill shall be tested for compaction where directed by the Contracting Officer. Isolated areas of soft cohesive soils shall be subcut and replaced with satisfactory fill of a texture similar to surrounding subgrade soil. Loose zones of non-saturated granular soil shall be compacted. The Contracting officer has the option to direct subgrade correction. Payment will be authorized for subgrade correction of native soils identified as suitable subgrade material in the project documents. Such payment or schedule changes will be negotiated in accordance with CONTRACT CLAUSE: CHANGES. Correction of fill soils not meeting compaction specifications shall be corrected at the Contractor's expense.

3.7 GRADE CONTROL

During construction, the lines and grades, including crown and cross slope indicated for the base course, shall be maintained by means of line and grade stakes placed by the Contractor. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining. The Contractor may use an approved laser system in lieu of a grade stake system. Adequate drainage shall be provided during the entire period of construction to prevent water from collecting or standing on the area to be constructed.

3.7.1 Grade and Cross Section Tolerances

Subgrade. 0.05 foot above or below prescribed elevation.

Base Courses. 0.05 foot below prescribed elevation.

3.8 PLACING

The mixed material shall be placed on the prepared subgrade or subbase in loose lifts not exceeding 6 inches in thickness. The layers, when compacted, shall be true to the grades or levels required, with the least possible surface disturbance. If base course becomes contaminated by traffic or sedimentation, the surface shall be cleaned prior to completing subsequent work by sweeping with power sweepers, power brooms, or hand brooms.

3.9 COMPACTION

3.9.1 Requirements

Each layer shall be compacted until there is no further evidence of consolidation. Water shall be applied to the base material during the mixing, spreading, and compacting operations when and in the quantities the Contracting Officer considers necessary for proper compaction.

3.9.2 Finishing

The surface of the top layer shall be finished to grade and cross section shown. Finished surface shall be of uniform texture. Light blading during compaction may be necessary for the finished surface to conform to the

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lines, grades, and cross sections. Should the surface for any reason become rough, corrugated, uneven in texture, or traffic marked prior to completion, such unsatisfactory portion shall be scarified, reworked, or replaced as directed.

3.10 SMOOTHNESS TEST

The surface of the top layer shall not deviate more than 1/2 inch when tested with a 10 foot straightedge applied parallel with and at right angles to the centerline of the area to be paved. Deviations exceeding 1/2 inch shall be corrected.

3.11 THICKNESS CONTROL

The thickness of the base course shall be measured at intervals of one measurement for at least each 500 square yards of base course. The depth measurement shall be made by test holes at least 3 inches in diameter. The work shall be scheduled when the Contracting Officer can observe the testing; and the Contracting Officer shall select the locations of the test holes, unless waived.

3.12 TESTING

The following tests shall be performed by and at the expense of the Contractor. Samples shall be taken when and where directed. Tests of materials not meeting the requirements specified will not be counted as part of the required tests. Copies of test results shall be submitted to the Contracting Officer.

3.12.1 Sieve Analysis

Aggregate Base. (ASTM C 117 and C 136) One test prior to placing or hauling and one test per 250 cy or fraction thereof (in place measure)

3.12.2 Correction

When any source of materials is changed or deficiencies are found, the initial analysis shall be repeated and the material already placed shall be retested to determine the extent of unacceptable material. All in-place unacceptable material shall be replaced.

3.13 MAINTENANCE

The base course shall be maintained in a condition that will meet specification requirements until accepted.

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SECTION 02740

BITUMINOUS PAVING

PART 1 GENERAL

Work under this section shall include all bituminous paving, including surface and base courses and tack coat, for paving of roads, parking lots, and isolated repairs over utility trenches.

1.1 REFERENCES

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

MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT), Standard Specifications for Construction

MNDOT 2331	(1995)	Plant-Mixed Bituminous Pavement
MNDOT 2357	(1995)	Bituminous Tack Coat
MNDOT 3151	(1995)	Bituminous Material

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	(1996a)	Sieve Analysis of Fine and Coarse Aggregates
ASTM D 2172	(1995)	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures

1.2 MEASUREMENT AND PAYMENT

1.2.1 Bituminous Base Course

Bituminous base course will be measured for payment by the square yard (SY) in place. Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified.

1.2.2 Bituminous Surface Course and Tack Coat

Bituminous surface course will be measured for payment by the square yard (SY) in place. Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified. Tack coat will not be measured for payment and all costs for tack coat shall be included in the price bid for Bituminous Surface Coat and Tack Coat.

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1.3 SUBMITTALS

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

SD-01 Data

Mixture Data; FIO.

Mixture data for the bituminous pavement as specified in PARAGRAPH: BITUMINOUS PAVEMENT MIXTURES.

SD-13 Certificates

Certificates of Compliance; FIO.

Certificates of compliance stating that materials incorporated in the work meet the requirements of these specifications.

SD-18 Records

Delivery Tickets; FIO.

Delivery tickets showing type of material and quantity of material incorporated in the work.

1.4 DEFINITIONS

Engineer: The term "Engineer" referenced in MNDOT Standard Specifications for Construction shall mean the Contracting Officer.

1.5 PLANT, EQUIPMENT, MACHINES, AND TOOLS

1.5.1 Straightedge

The Contractor shall furnish and maintain at the site one 12-foot straightedge for each bituminous paver. Straightedge shall be made available for Government use.

1.6 WEATHER LIMITATIONS

Bituminous course or coat shall be applied only on a dry surface. No material shall be placed when the temperature of the substrate surface is below 40 degree F.

1.7 PROTECTION OF PAVEMENT

After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until the pavement has cooled to 140 degrees F.

1.8 GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS

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Finished surface of bituminous courses shall conform to gradeline and elevations shown and to surface-smoothness requirements specified.

1.8.1 Plan Grade

The grade of the completed surface shall not deviate more than 0.05 foot from the plan grade.

1.8.2 Surface Smoothness

When a 12-foot straightedge is laid on the surface parallel with the centerline of the paved area or transverse from crown to pavement edge, the surface shall vary not more than 1/4 inch from the straightedge.

1.9 AGGREGATE SOURCES AND SAMPLING

It shall be the responsibility of the Contractor to make its own investigations for sources of suitable aggregate for the bituminous mixture and to make its own arrangements with the owners of the pits for procuring the required quantity of suitable material. After the award of the contract and at least 30 calendar days prior to placing, the Contractor shall designate in writing only one source or one combination of sources from which it proposes to furnish aggregates. Samples shall be provided to the Contracting Officer at the construction site at the expense of the Contractor. Approval of samples from a source of aggregate is not to be construed as approval of all materials from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels when such materials are unsuitable for aggregate as determined by the Contracting Officer. Materials produced from an approved source shall meet all the requirements of this section.

1.10 ACCESS TO PLANT AND EQUIPMENT

The Contracting Officer shall have access at all times to all parts of the paving plant for checking adequacy of the equipment in use; inspecting operation of the plant; verifying weights, proportions, and character of materials; and checking temperatures maintained in preparation of the mixtures.

PART 2 PRODUCTS

2.1 TACK COAT

MnDOT 2357.

2.2 BITUMINOUS MATERIAL

MnDOT 3151, Asphalt Cement (AC), Penetration Grade 120/150.

2.3 BITUMINOUS HOT MIX

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- a. Bituminous Base Course. MnDOT 2331, type as shown.
- b. Bituminous Wearing Course. MnDOT 2331, type as shown.

2.4 JOB MIX FORMULA

Mixture for each bituminous course shall be determined by one of the following methods.

1. A mixture meeting the specified State specification may be used provided:
 - a. The mixture is currently approved by the State for use in a State paving project in the local area;
 - b. Evidence satisfactory to the Contracting Officer is submitted indicating such State approval;
 - c. The mixture uses the same aggregate source that is selected by the Contractor, and
 - d. The mixture is approved by the Contracting Officer.
2. A written job-mix formula proposal by the Contractor, submitted to the Contracting Officer for approval setting forth:
 - a. a specific source or combination of sources for aggregate
 - b. a definite percentage of the aggregate passing each sieve;
 - c. the percentage of bituminous material; and
 - d. the temperature at which the mixture will be delivered to the worksite.

The proposal shall be accompanied by representative samples of aggregate to be used and shall be submitted to the Contracting Officer at least 15 calendar days prior to the beginning of bituminous pavement operations.

PART 3 EXECUTION

Bituminous pavement operations shall not begin until approval of the mixture for each course. Prior to paving operations, the lines and grades will be verified and/or corrected to be as indicated and within the tolerances specified in SECTION: AGGREGATE BASE COURSE.

3.1 PREPARATION

Prior to placing each bituminous course or coat, the underlying surface shall be cleared of all foreign and objectionable matter using power blowers, power brooms, or hand brooms. The Contracting Officer will inspect the underlying course or coat for conformance with the specifications and drawings. If the underlying course or coat is acceptable, work on the next bituminous course or coat may commence; if not acceptable, the Contractor shall take such corrective actions as directed to bring the underlying course or coat into conformance with the specifications and drawings before placing the next bituminous course or coat.

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3.2 TRANSPORTATION OF BITUMINOUS MIXTURE

Each load of bituminous mixture having a temperature of less than 235 degrees F. when dumped into the bituminous paver, or when dumped for spreading when a bituminous paver is not used, will be rejected. Bituminous mixtures that are crusted or have become wet by precipitation shall be rejected.

3.3 TACK COATING

Prior to placing bituminous wear course over the base course, the entire surface shall be treated with a tack coat in conformance with MnDOT 2357.3. Rate of application shall be 0.05 to 0.15 gallons per square yard as determined by the Contracting Officer to suit field conditions.

3.4 PLACING BITUMINOUS

Bituminous base course and wear course shall be placed in accordance with MnDOT 2331.3.

3.5 COMPACTION OF MIXTURE

The compaction shall be monitored using the control strip method in accordance with MnDOT 2331. One control strip shall be conducted for each day of paving operations. Additional control strip shall be conducted if the Contracting Officer determines that temperature, rate of placement, or other conditions change significantly. The contractor shall have on site a nuclear density meter that is designed for testing bituminous and/or concrete surfaces and an operator who is familiar with its use and certified to use nuclear gages. The specified density shall be obtained before the mat temperature drops below 185 degrees F.

3.5.1 Correcting Deficient Areas

Mixtures that become contaminated or are defective shall be removed to the full thickness of the course. Edges of the area to be removed shall be cut so that sides are perpendicular and parallel to the direction of traffic and so that the edges are vertical. Fresh paving mixture shall be placed in the excavated areas in sufficient quantity so that the finished surface will conform to grade and smoothness requirements. Paving mixture shall be compacted to the density specified herein. Skin patching of an area that has been rolled shall not be permitted.

3.6 TESTING

The following testing shall be performed by and at the expense of the Contractor. Samples shall be taken when and where directed by the Contracting Officer. Core samples shall be taken for the purposes of measuring course thickness and specific density. The Contractor shall fill core holes with bituminous mixture and compact as specified in MnDOT 2331. Tests of materials not meeting the requirements specified will not be counted as part of the required tests.

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TABLE. BITUMINOUS TESTING

<u>Test</u>	<u>Material</u>	<u>Frequency</u>
Sieve Analysis ASTM C 136	Aggregates from Base and Surface Courses	One test per 125 cubic yards or fraction thereof for each type of material
Core Samples MNDOT 2331	Base Course and Surface Course	Two core samples of each course
Extraction of Bitumen ASTM D 2172	Base Course and Surface Course	One sample each course

-- End of Section --

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SECTION 02925

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SECTION 02925

TOPSOIL AND SEEDING

PART 1 GENERAL

1.1 REFERENCES

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

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Aug 95) Federal Seed Act Regulations Part 201

1.2 SUBMITTALS

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

SD-13 Certificates

Certificates of Compliance; FIO.

A certificate of compliance shall be submitted prior to the delivery of materials certifying that seed meets the requirements specified.

SD-18 Records

Quantity Check; FIO.

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

1.3 DELIVERY, INSPECTION AND STORAGE

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed materials shall be delivered in manufacturer's original, unopened containers with labels and tags intact and legible. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Materials shall be stored in areas provided by the Contractor. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants.

1.4 MEASUREMENT AND PAYMENT

RED LAKE CONTROL STRUCTURE

1.4.1 Placing Topsoil

Topsoil shall be measured by the cubic yard (CY) of material in place. Payment will be made at the contract unit price and will constitute full compensation for the purchase, delivery, and spreading the material as shown on the drawings.

1.4.2 Seeding

Seeding will be measured for payment by the square yard (SY) seeded within the neatlines shown. Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified. Seeding for the purpose of restoring damaged turf areas outside of the areas indicated on the drawings to be seeded will not be measured for payment.

PART 2 PRODUCTS

2.1 SEED

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for mixture percentage, purity, germination, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws. The seed mix shall be proportioned by weight as follows:

<u>Seed</u>	<u>Percentage of Mix</u>
Perennial Rye Grass	50 to 75
Fine Fescue	25 to 50

2.2 MULCH

Straw mulch materials shall consist of wheat, oat, or rye straw, hay, grass, or other plants approved by the Contracting Officer. Mulch materials shall be native to the region. The mulch material shall be air dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. The mulch shall be seed free or fumigated to prevent introduction of weeds. The use of mulch that contains noxious weeds will not be accepted. Dry mulching material which breaks and does not bend is unacceptable. Mulch shall have a consistency for placing with commercial mulch blowing equipment.

2.3 Topsoil

Topsoil shall be obtained off site from sources chosen by the Contractor. Topsoil shall be a natural, friable soil representative of productive soils in the vicinity. It shall be obtained from well drained areas and shall be free of any admixture of subsoil, foreign matter, objects larger than 1 1/2 inch in any dimension, toxic substances, and any material or substance that may be harmful to plant growth. No topsoil shall be obtained from on-site areas not designated for excavation.

RED LAKE CONTROL STRUCTURE

PART 3 EXECUTION

3.1 TOPSOIL

It is anticipated that there is not suitable topsoil within the areas to be excavated. Therefore, topsoil shall be purchased from a source off site.

3.2 PLACEMENT OF TOPSOIL

Topsoil placement shall be staged such that construction traffic for hauling material does not travel over the topsoil after it is placed. Topsoil shall be spread with a low ground pressure dozer, skid steer loaders, or other equipment capable of lightly compacting the soil and approved by the Contracting Officer. Topsoil shall be spread in one lift of uniform thickness.

3.3 SEEDING RESTRICTIONS

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval. Seed and mulch shall not be broadcast when winds are above 10 mile per hour. No finished construction area shall be left untopsoiled and unseeded during the winter months.

3.4 SITE PREPARATION

The Contractor shall verify that finished grades are in conformance with the drawings and that topsoil is suitable prior to seeding operations. Field areas shall have debris and stones larger than 3 inches in any dimension removed from the surface. Undulations or irregularities in the surface shall be leveled. Topsoil on slopes up to a maximum 3H:1V slope shall be tilled to a nominal 2 inch depth by plowing, disking, harrowing, or other approved method.

3.5 SEEDING

Seed shall be applied at the rate of 200 pounds per acre (25 SY per pound of seed) using broadcast seeders. Half the total rate of seed application shall be sown with sower moving in one direction, and the remainder with sower moving at right angles to first sowing. Seed shall be covered to a nominal 1/4 inch depth by disk harrow, steel mat drag, cultipacker, or other approved device.

3.6 MULCHING

Hay or straw mulch shall be spread uniformly at the rate of 1-1/2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the

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ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.7 WATERING

Watering shall be started within 1 day after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 3 inch depth. Run-off and puddling shall be prevented.

3.8 TURF ESTABLISHMENT

Seeded areas shall be kept moist by watering as necessary until a satisfactory stand of turf is established. A satisfactory stand of turf shall contain a minimum of 50 grass plants per square foot, with bare spots not exceeding 2 percent of the total seeded area. Finished areas shall be protected from damage by vehicular or pedestrian traffic and erosion.

-- End of Section --

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SECTION 03301

NON-SHRINK GROUT

PART 1 GENERAL

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

ACI 347 (1988) Recommended Practice for Concrete Formwork

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 31 (1991) Making and Curing Concrete Test Specimens in the Field

ASTM C 109 (1995) Compressive Strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens)

ASTM C 1107 (1991) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

1.2 MEASUREMENT AND PAYMENT

The work of this section will not be measured for separate payment and all costs shall be included in the price bid for the item to which the work pertains.

1.3 SUBMITTALS

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

SD-08 Statements

Grout Plan; GA.

A detailed plan shall be submitted for approval, showing equipment and procedures proposed for use in mixing and placing the grout. The degree of fluidity proposed for use shall also be given.

SD-13 Certificates

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Grout Properties; FIO.

Descriptive literature of the grout proposed for use shall be furnished together with a certificate from the manufacturer stating that it is suitable for the application or exposure for which it is being considered. Prepackaged material requiring only the addition of water will be accepted on the basis of certified laboratory test results showing that the material meets the requirements of ASTM C 1107, Grade C.

1.4 MEASUREMENT AND PAYMENT

The work of this section will not be measured for separate payment and costs therefor shall be included in the bid item to which the work pertains.

PART 2 PRODUCTS

2.1 MATERIALS

Nonshrink grout shall conform to ASTM C 1107, Grade C, and shall be a prepackaged nonmetallic commercial formulation suitable for the proposed application and be proportioned to provide a minimum 28-day compressive strength of 5,000 pounds per square inch. The grout shall be mixed, placed, and cured in accordance with the grout manufacturer's written specification, or as noted by the Contracting Officer.

2.1.1 Water

Water for mixing shall be free from sewage, oil, acid, alkali, salts, and objectionable quantities of silt, organic matter, and other deleterious substances. Water shall be potable. River water shall not be used.

PART 3 EXECUTION

3.1 PREPARATION

Clean grout contact surfaces of oil, grease, scale, and other foreign matter. Chip away unsound concrete leaving surface level, but rough.

3.2 FORMWORK

Formwork shall be in accordance with ACI 347.

3.3 MIXING AND PLACING

Mixing and placing shall be in conformance with the material manufacturer's instructions and as specified therein. Nonshrink grout ingredients shall be thoroughly dry-mixed before adding water. After adding water, the batch shall be mixed for three minutes. Batches shall be of size to allow continuous placement of freshly mixed grout. Grout not used within 30 minutes after mixing shall be discarded. Surfaces upon which nonshrink grout is to be placed shall be clean, damp and free from frost, snow, ice, standing or flowing water, loose particles, debris and foreign matter. All

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equipment needed to place the nonshrink grout shall be at the placement site and in good operating condition. The space to receive grout shall be filled solid with the grout. Forms shall be of wood or other equally suitable material for retaining the grout and shall be removed after the grout has set. The placed grout shall be worked to eliminate voids. Temperature of the grout, and of surfaces receiving the grout, shall be maintained at 65 to 85 degrees F until after setting. The exposed grout's surface shall be struck level and finished to match as close as possible to the adjacent undisturbed existing concrete.

3.4 CURING AND PROTECTION

Nonshrink grout shall be cured and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage, and exposure to rain and flowing water, beginning immediately after placement and continuing for seven days. All materials and equipment needed for adequate curing and protection shall be available and at the site of the placement prior to start of grout placement. Preservation of moisture for grout surfaces shall be accomplished through the application of impervious sheet material, wet curing by keeping constantly wet by means of water-soaked burlap or the application of membrane forming curing compound in accordance with the manufacturer's printed or written instructions.

3.5 QUALITY CONTROL

3.5.1 General

In accordance with the provisions of SECTION: CONTRACTOR QUALITY CONTROL, a quality control system shall be established and maintained that regulates, tests, and inspects all the procedures, equipment, materials, and personnel so that the completed project will comply with the requirements of the project specifications and the following.

3.5.2 Compression Test Specimens

Samples for strength tests for each mix design used shall be taken for each 9 cubic feet of grout, or once each day if less than 9 cubic feet of grout is placed. Compression test specimens for acceptance tests shall be molded, cured and tested in accordance with the applicable portions of ASTM C 31, ASTM C 109 and ASTM C 1107. Three cube specimens shall be tested at each age: 24 hours, three days and 28 days.

3.5.3 Records

A copy of the records of inspections, as well as the records of corrective action taken, shall be furnished to the Government as directed.

-- End of Section --

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SECTION 03307

CONCRETE FOR MINOR STRUCTURES

PART 1 GENERAL

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

- | | |
|--------------|---|
| ACI 308 | (1992) Standard Practice for Curing Concrete |
| ACI 318/318R | (1992) Building Code Requirements for Reinforced Concrete |
| ACI 347R | (1994) Formwork for Concrete |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- | | |
|-------------------|---|
| ASTM A 185 | (1994) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement |
| ASTM A 615/A 615M | (1995a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement |
| ASTM C 31 | (1991) Making and Curing Concrete Test Specimens in the Field |
| ASTM C 33 | (1993) Concrete Aggregate |
| ASTM C 39 | (1993) Compressive Strength of Cylindrical Concrete Specimens |
| ASTM C 94 | (1994) Ready-Mixed Concrete |
| ASTM C 143 | (1990a) Slump of Hydraulic Cement Concrete |
| ASTM C 150 | (1995) Portland Cement |
| ASTM C 171 | (1992) Sheet Materials for Curing Concrete |
| ASTM C 172 | (1990) Sampling Freshly Mixed Concrete |
| ASTM C 231 | (1991b) Air Content of Freshly Mixed Concrete by the Pressure Method |

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ASTM C 260	(1994) Air-Entraining Admixtures for Concrete
ASTM C 309	(1994) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494	(1992) Chemical Admixtures for Concrete
ASTM C 618	(1994a) Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
ASTM C 685	(1994) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C 920	(1994) Elastomeric Joint Sealants
ASTM D 75	(1987; R 1992) Sampling Aggregates
ASTM D 1752	(1984; R 1992) Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

CORPS OF ENGINEERS (COE)

COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete
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1.2 UNIT PRICES

1.2.1 Concrete

1.2.1.1 Payment

Payment will be made for all costs associated with furnishing, delivering, placing, finishing, and curing of concrete for the various items of the schedule, which price shall include the cost of all formwork, preformed expansion joints, field-molded sealants, waterstops, reinforcing steel bars or wire reinforcement associated with the lump sum bid item.

1.2.1.2 Measurement

Concrete will not be measured for separate payment as payment is made on a lump sum basis.

1.3 DESIGN AND PERFORMANCE REQUIREMENTS

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. Slump and air content will be determined in accordance with

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ASTM C 143 and ASTM C 231, respectively, when cylinders are molded. Compression test specimens will be made, cured, and transported in accordance with ASTM C 31. Compression test specimens will be tested in accordance with ASTM C 39. Samples for strength tests will be taken not less than once each shift in which concrete is produced. A minimum of three specimens will be made from each sample; two will be tested at 28 days (90 days if pozzolan is used) for acceptance, and one will be tested at 7 days for information.

1.3.1 Strength

Acceptance test results will be the average strengths of two specimens tested at 28 days (90 days if pozzolan is used). The strength of the concrete will be considered satisfactory so long as the average of three consecutive acceptance test results equal or exceed the specified compressive strength, $f'c$, and no individual acceptance test result falls below $f'c$ by more than 500 psi.

1.3.2 Construction Tolerances

A Class "C" finish shall apply to all surfaces except those specified to receive a Class "D" finish. A Class "D" finish shall apply to all surfaces which will be permanently concealed after construction. The surface requirements for the classes of finish required shall be as specified in ACI 347R.

1.3.3 Concrete Mixture Proportions

Concrete mixture proportions shall be the responsibility of the Contractor.

Mixture proportions shall include the dry weights of cementitious material(s); the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per cubic yard of concrete. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project. Specified compressive strength $f'c$ shall be 4,500 psi at 28 days (90 days if pozzolan is used). The maximum nominal size coarse aggregate shall be 1-1/2 inches, in accordance with ACI 318/318R.

The air content shall be between 4.5 and 7.5 percent. The slump shall be between 2 and 5 inches. The maximum water cement ratio shall be 0.45.

1.4 SUBMITTALS

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

SD-01 Data

Air-Entraining Admixture; FIO. Accelerating Admixture; FIO.
Water-Reducing or Retarding Admixture; FIO. Curing Materials; FIO.
Reinforcing Steel; FIO. Expansion Joint Filler Strips, Premolded; FIO.
Joint Sealants - Field Molded Sealants; FIO. Waterstops; FIO.

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Manufacturer's literature is available from suppliers which demonstrates compliance with applicable specifications for the above materials.

Batching and Mixing Equipment; FIO.

Batching and mixing equipment will be accepted on the basis of manufacturer's data which demonstrates compliance with the applicable specifications.

Conveying and Placing Concrete; FIO.

The methods and equipment for transporting, handling, depositing, and consolidating the concrete shall be submitted prior to the first concrete placement.

SD-08 Statements

Formwork; FIO.

Formwork design shall be submitted prior to the first concrete placement.]

SD-09 Reports

Aggregates; FIO.

Aggregates will be accepted on the basis of certificates of compliance and test reports that show the material(s) meets the quality and grading requirements of the specifications under which it is furnished.

Concrete Mixture Proportions; FIO.

Ten days prior to placement of concrete, the contractor shall submit the mixture proportions that will produce concrete of the quality required. Applicable test reports shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

SD-13 Certificates

Cementitious Materials; FIO.

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted in accordance with the Special Clause "CERTIFICATES OF COMPLIANCE". Cementitious material will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by mill test reports that the material(s) meet the requirements of the specification under which it is furnished.

Aggregates; FIO.

Aggregates will be accepted on the basis of certificates of compliance and tests reports that show the material(s) meet the quality and grading requirements of the specifications under which it is furnished.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Cementitious Materials

Cementitious materials shall conform to the appropriate specifications listed:

2.1.1.1 Portland Cement

ASTM C 150, Type I or II.

2.1.1.2 Pozzolan

Pozzolan shall conform to ASTM C 618, Class C or F, including requirements of Tables 1A and 2A.

2.1.2 Aggregates

Aggregates shall meet the quality and grading requirements of ASTM C 33 Class Designations 4S or better.

2.1.3 Admixtures

Admixtures to be used, when required or approved, shall comply with the appropriate specification listed. Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the contractor at the request of the Contracting Officer and shall be rejected if test results are not satisfactory.

2.1.3.1 Air-Entraining Admixture

Air-entraining admixture shall meet the requirements of ASTM C 260.

2.1.3.2 Water-Reducing or Retarding Admixture

Water-reducing or retarding admixture shall meet the requirements of ASTM C 494, Type A, B, or D. High-range water reducing admixture Type F or G may be used only when approved, approval being contingent upon particular placement requirements as described in the Contractor's Quality Control Plan.

2.1.4 Water

Water for mixing and curing shall be fresh, clean, potable, and free from injurious amounts of oil, acid, salt, or alkali, except that unpotable water may be used if it meets the requirements of COE CRD-C 400.

2.1.5 Reinforcing Steel

Reinforcing steel bar shall conform to the requirements of ASTM A 615/A 615M, Grade 60. Welded steel wire fabric shall conform to the requirements of

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ASTM A 185. Details of reinforcement not shown shall be in accordance with ACI 318/318R, Chapters 7 and 12.]

2.1.6 Expansion Joint Filler Strips, Premolded

Expansion joint filler strips, premolded shall be sponge rubber conforming to ASTM D 1752, Type I.

2.1.7 Joint Sealants - Field Molded Sealants

Joint sealants - field molded sealants shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for vertical joints and Type M, Grade P, Class 25, use T for horizontal joints. Bond-breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials. The backup material shall be compressible, nonshrink, nonreactive with the sealant, and a nonabsorptive material such as extruded butyl or polychloroprene foam rubber. Immediately prior to installation of field-molded sealants, the joint shall be cleaned of all debris and further cleaned using water, chemical solvents, or other means as recommended by the sealant manufacturer or directed.

2.1.8 Formwork

The design and engineering of the formwork as well as its construction, shall be the responsibility of the Contractor.

2.1.9 Form Coatings

Forms for exposed surfaces shall be coated with a nonstaining form oil, which shall be applied shortly before concrete is placed.

2.1.10 Curing Materials

Curing materials shall conform to the following requirements.

2.1.10.1 Impervious Sheet Materials

Impervious sheet materials, ASTM C 171, type optional, except polyethylene film, if used, shall be white opaque.

2.1.10.2 Membrane-Forming Curing Compound

ASTM C 309, Type 1-D or 2, Class A.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 General

Construction joints shall be prepared to expose coarse aggregate, and the surface shall be clean, damp, and free of laitance. Ramps and walkways, as necessary, shall be constructed to allow safe and expeditious access for concrete and workmen. Snow, ice, standing or flowing water, loose

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particles, debris, and foreign matter shall have been removed. Earth foundations shall be satisfactorily compacted. Spare vibrators shall be available. The entire preparation shall be accepted by the Government prior to placing.

3.1.2 Embedded Items

Reinforcement shall be secured in place; joints, anchors, and other embedded items shall have been positioned. Internal ties shall be arranged so that when the forms are removed all metal will be not less than 2 inches from concrete surfaces permanently exposed to view or exposed to water on the finished structures. Embedded items shall be free of oil and other foreign matters such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. All equipment needed to place, consolidate, protect, and cure the concrete shall be at the placement site and in good operating condition.

3.1.3 Formwork Installation

Forms shall be properly aligned, adequately supported, and mortar-tight. The form surfaces shall be smooth and free from irregularities, dents, sags, or holes when used for permanently exposed faces. All exposed joints and edges shall be chamfered, unless otherwise indicated.

3.1.4 Production of Concrete

3.1.4.1 Ready-Mixed Concrete

Ready-mixed concrete shall conform to ASTM C 94 except as otherwise specified.

3.1.4.2 Concrete Made by Volumetric Batching and Continuous Mixing

Concrete made by volumetric batching and continuous mixing shall conform to ASTM C 685.

3.1.4.3 Batching and Mixing Equipment

The contractor shall have the option of using an on-site batching and mixing facility. The facility shall provide sufficient batching and mixing equipment capacity to prevent cold joints. The method of measuring materials, batching operation, and mixer shall be submitted for review. On-site plant shall conform to the requirements of either ASTM C 94 or ASTM C 685.

3.2 CONVEYING AND PLACING CONCRETE

Conveying and placing concrete shall conform to the following requirements.

3.2.1 General

Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation without approval. When concrete is

mixed and/or transported by a truck mixer, the concrete shall be delivered to the site of the work and discharge shall be completed within 1-1/2 hours or 45 minutes when the placing temperature is 85 degrees F or greater unless a retarding admixture is used. Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods which prevent segregation or loss of ingredients. Concrete shall be in place and consolidated within 15 minutes after discharge from the mixer. Concrete shall be deposited as close as possible to its final position in the forms and be so regulated that it may be effectively consolidated in horizontal layers 18 inches or less in thickness with a minimum of lateral movement. The placement shall be carried on at such a rate that the formation of cold joints will be prevented.

3.2.2 Consolidation

Each layer of concrete shall be consolidated by rodding, spading, or internal vibrating equipment. Internal vibration shall be systematically accomplished by inserting the vibrator through the fresh concrete in the layer below at a uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1.5 times the radius of action of the vibrator and overlay the adjacent, just-vibrated area by a few inches. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the layer below, if such a layer exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly at the rate of about 3 inches per second.

3.2.3 Cold-Weather Requirements

No concrete placement shall be made when the ambient temperature is below 35 degrees F or if the ambient temperature is below 40 degrees F and falling. Suitable covering and other means as approved shall be provided for maintaining the concrete at a temperature of at least 50 degrees F for not less than 72 hours after placing and at a temperature above freezing for the remainder of the curing period. Salt, chemicals, or other foreign materials shall not be mixed with the concrete to prevent freezing. Any concrete damaged by freezing shall be removed and replaced at the expense of the contractor.

3.2.4 Hot-Weather Requirements

When the rate of evaporation of surface moisture, as determined by use of Figure 1 of ACI 308, is expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow.

3.3 FORM REMOVAL

Forms shall not be removed before the expiration of 24 hours after concrete placement except where otherwise specifically authorized. Supporting forms and shoring shall not be removed until the concrete has cured for at least 5 days. When conditions on the work are such as to justify the requirement, forms will be required to remain in place for longer periods.

3.4 FINISHING

3.4.1 General

No finishing or repair will be done when either the concrete or the ambient temperature is below 50 degrees F.

3.4.2 Finishing Formed Surfaces

All fins and loose materials shall be removed, and surface defects including tie holes shall be filled. All honeycomb areas and other defects shall be repaired. All unsound concrete shall be removed from areas to be repaired. Surface defects greater than 1/2 inch in diameter and holes left by removal of tie rods in all surfaces not to receive additional concrete shall be reamed or chipped and filled with dry-pack mortar. The prepared area shall be brush-coated with an approved epoxy resin or latex bonding compound or with a neat cement grout after dampening and filled with mortar or concrete. The cement used in mortar or concrete for repairs to all surfaces permanently exposed to view shall be a blend of portland cement and white cement so that the final color when cured will be the same as adjacent concrete.

3.4.3 Finishing Unformed Surfaces

All unformed surfaces that are not to be covered by additional concrete or backfill shall be float finished to elevations shown, unless otherwise specified. Surfaces to receive additional concrete or backfill shall be brought to the elevations shown and left as a true and regular surface. Exterior surfaces shall be sloped for drainage unless otherwise shown. Joints shall be carefully made with a jointing tool. Unformed surfaces shall be finished to a tolerance of 3/8 inch for a float finish as determined by a 10 foot straightedge placed on surfaces shown on the plans to be level or having a constant slope. Finishing shall not be performed while there is excess moisture or bleeding water on the surface. No water or cement shall be added to the surface during finishing.

3.4.3.1 Float Finish

Surfaces to be float finished shall be screeded and darbied or bullfloated to eliminate the ridges and to fill in the voids left by the screed. In addition, the darby or bullfloat shall fill all surface voids and only slightly embed the coarse aggregate below the surface of the fresh concrete. When the water sheen disappears and the concrete will support a person's weight without deep imprint, floating should be completed. Floating should embed large aggregates just beneath the surface, remove slight imperfections, humps, and voids to produce a plane surface, compact the concrete, and consolidate mortar at the surface.

3.4.3.2 Expansion and Contraction Joints

Expansion and contraction joints shall be made in accordance with the details shown or as otherwise specified.

3.5 CURING AND PROTECTION

Beginning immediately after placement and continuing for at least 7 days, all concrete shall be cured and protected from premature drying, extremes in temperature, rapid temperature change, freezing, mechanical damage, and exposure to rain or flowing water. All materials and equipment needed for adequate curing and protection shall be available and at the site of the placement prior to the start of concrete placement. Preservation of moisture for concrete surfaces not in contact with forms shall be accomplished by one of the following methods:

- a. Continuous sprinkling or ponding.
- b. Application of absorptive mats or fabrics kept continuously wet.
- c. Application of sand kept continuously wet.
- d. Application of impervious sheet material conforming to ASTM C 171.
- e. Application of membrane-forming curing compound conforming to ASTM C 309, Type 1-D, on surfaces permanently exposed to view and Type 2 on other surfaces shall be accomplished in accordance with manufacturer's instructions.

The preservation of moisture for concrete surfaces placed against wooden forms shall be accomplished by keeping the forms continuously wet for 7 days. If forms are removed prior to end of the required curing period, other curing methods shall be used for the balance of the curing period. During the period of protection removal, the temperature of the air in contact with the concrete shall not be allowed to drop more than 25 degrees F within a 24 hour period.

3.6 TESTS AND INSPECTIONS

3.6.1 General

The individuals who sample and test 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.

3.6.2 Inspection Details and Frequency of Testing

3.6.2.1 Preparations for Placing

Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor to certify that it is ready to receive concrete.

3.6.2.2 Air Content

Air content shall be checked at least once during each shift that concrete is placed. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 231.

3.6.2.3 Slump

Slump shall be checked once during each shift that concrete is produced. Samples shall be obtained in accordance with ASTM C 172 and tested in accordance with ASTM C 143.

3.6.2.4 Consolidation and Protection

The Contractor shall ensure that the concrete is properly consolidated, finished, protected, and cured.

3.6.3 Action Required

3.6.3.1 Placing

The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators, which are in working order and have competent operators, are available. Placing shall not be continued if any pile is inadequately consolidated.

3.6.3.2 Air Content

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment shall be made to the dosage of the air-entrainment admixture.

3.6.3.3 Slump

Whenever a test result is outside the specification limits, the concrete shall not be delivered to the forms and an adjustment should be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the water-cement ratio does not exceed that specified in the submitted concrete mixture proportion.

3.6.4 Reports

The results of all tests and inspections conducted at the project site shall be reported informally at the end of each shift and in writing weekly and shall be delivered within 3 days after the end of each weekly reporting period. See Section 01451 CONTRACTOR QUALITY CONTROL.

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SECTION 03900

CONCRETE SURFACE REPAIRS

PART 1 GENERAL

The work under this section shall include the removal and disposal of deteriorated concrete, and the furnishing and installation of cast-in-place FRAPMC concrete work and joint sealing for the repair of concrete surfaces, and joints. Conventional concrete replacement in SECTION: CONCRETE FOR MINOR STRUCTURES; concrete removal is covered herein.

Fiber-reinforced acrylic polymer modified concrete is designated as FRAPMC herein after. FRAPMC consists of mortar, coarse aggregate, and fiber reinforcement, and shall be used for surface repair as indicated on the drawings.

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

- ACI 305 (1991) Hot Weather Concreting
- ACI 306 (1988) Cold Weather Concreting
- ACI 548.1 (1992) Guide for the Use of Polymers in Concrete

CONCRETE SAWING AND DRILLING ASSOCIATION (CSDA)

- CSDA W-1 () Concrete Wall Sawing

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM A 563 (1994) Carbon and Alloy Steel for Nuts
- ASTM C 31/C 31M (1996) Making and Curing Concrete Test Specimens in the Field
- ASTM C 33 (1993) Concrete Aggregates
- ASTM C 39 (1996) Compressive Strength of Cylindrical Concrete Specimens
- ASTM C 882 (1990) Test Method for Bond Strength of

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Epoxy-Resin System Used with Concrete By
Slant Shear

ASTM C 920 (1995) Elastomeric Joint Sealant

ASTM D 3405 (1996) Standard Specification for Joint
Sealants, Hot-Applied for Concrete and
Asphalt Pavements

FEDERAL SPECIFICATIONS (FED SPEC).

FF-S-325 () Shield, Expansion; Nail Expansion;
AM (3) and Nail Drive Screw (Devices,
Anchoring, Masonry)

1.2 SUBMITTALS

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

SD-01 Data

FRAPMC Mix Design; FIO.

Provide the dry weights of cement and saturated surface dry weights of fine and coarse aggregate and quantities, types, and name of admixtures and of water per cubic yard of concrete that will be used in the manufacture of mix. Also, furnish satisfactory evidence that the materials to be used and proportions selected will produce concrete of the quality specified.

SD-06 Instructions

FRAPMC; FIO.

Manufacturer's literature, including surface preparation, mixing and application procedures. The contractor shall keep one copy of the instructions available at the job site at all times while this work is being performed.

SD-07 Schedules

Concrete Repair Schedule; FIO.

A construction schedule for the repair work to be performed under this section shall be submitted.

SD-08 Statements

Concrete Removal and Disposal Scheme; GA.

The Contractor shall submit a written proposal outlining the proposed procedure for removing damaged concrete and the methods of retaining and

disposal of all debris.

FRAPMC Forming Scheme; FIO.

Installation procedure shall include a typical formwork detail for a spalled area, including a description of how the Contractor plans to install the formwork, place and consolidate the FRAPMC behind the formwork, and remove the formwork without damaging the newly placed material.

SD-09 Reports

Vertical and Horizontal Joint Sealants and Accessories; FIO.

Certified manufacturer's test reports shall be provided for the polyurethane sealant, elastomeric joint filler, and butyl rod to verify compliance with applicable specifications.

FRAPMC Test Results; FIO.

Submit reports from testing required under this section.

SD-13 Certificates

FRAPMC; FIO.

Each applicable supplier shall provide a signed certification that cement, aggregates, and additives conform to the requirements specified herein.

SD-14 Samples

Field-Molded Sealant and Primer; FIO.

One 16-ounce tube of field-molded sealant shall be provided for testing. Also provide one container of primer when use of primer is recommended by the sealant manufacturer.

1.3 MEASUREMENT AND PAYMENT

1.3.1 Concrete Repair Upstream Left Corner

The work associated with the Concrete Repair Upstream Left Corner, including sawcutting, removal of deteriorated concrete, and preparation of the surface to receive new concrete shall not be measured for payment and shall be paid for on a lump sum basis complete.

1.3.2 Concrete repair (FRAPMC)

Concrete repair, (FRAPMC), shall be measured by the cubic foot (CF), and payment shall constitute full compensation for the cost of equipment, material, and labor for the complete concrete removal and installation.

1.3.3 Joint sealant

Joint sealant, vertical, shall be measured by the linear foot (LF), and

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payment shall constitute full compensation for the cost of equipment, material, and labor for the complete installation of the oakum, joint filler, backer rod, and sealant in the vertical monolith joints.

1.4 PREVIOUS EXPERIENCE

The St. Paul District has used FRAPMC for concrete repair at several similar locations. That experience indicates special forming materials may be necessary to prevent problems associated with material flow and aggressive bonding to the forms. Satisfactory results were obtained using polyethylene board for forms and disintegratable board for joints. This information is provided to alert bidders to the potential for abnormal conditions and is not an endorsement or recommendation of the above materials or procedures.

1.5 WEATHER LIMITATIONS

Refer to SECTION: GENERAL for time restrictions.

1.5.1 Cold Weather

Cold weather concreting shall be in accordance with ACI 306, except as modified herein. When daily low temperatures are below freezing and/or when it is likely that temperatures will be below freezing within seven days of the concrete placement, provide protection, heat, and/or heated materials so as to maintain the concrete at 45 degrees F to 65 degrees F for the complete seven-day curing period. Provide sufficient thermometers, controls, and supervision to ensure that these requirements are being met. Maintain the protection so that concrete does not cool at more than 20 degrees F per 24 hours. Heating devices used shall not blow or radiate intense heat directly at concrete or formwork. Heating devices used shall not discharge products of combustion into enclosures. Maintain the required curing as specified hereinafter.

1.5.2 Hot Weather

Hot weather concreting shall be in accordance with ACI 305, except as modified herein. When weather conditions are such that excessive drying and/or premature set is liable to occur, provide wind screens, shading, and/or cooled materials so as to prevent these conditions and to provide good finishing conditions, as applicable. If crushed ice is used, it must be 100 percent melted before discharge of the materials from the mixer.

1.6 EQUIPMENT

Equipment that is dependable and adequate to accomplish the specified work shall be assembled at the work site in sufficient time before the start of the work to permit thorough inspection, calibration of weighing and measuring devices, adjustment of parts, and the making of any repairs that may be required. The equipment shall be maintained in acceptable working condition during the life of the project.

1.6.1 Sandblasting

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Sandblasting equipment shall include an air compressor, hose, and long-wearing venturi-type nozzle of proper size, shape and opening. The maximum nozzle opening shall not exceed 1/4 inch. The air compressor shall be capable of maintaining a line pressure of not less than 90 psi at the nozzle while in use. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water. The height, angle of inclination and the size of the nozzle shall be adjusted as necessary to provide satisfactory results. The Contractor shall provide protective covers and barriers as required to prevent over-spray onto adjacent surfaces.

1.7 STORAGE OF MATERIALS

Cement and pozzolan shall be stored in weathertight buildings, bins, or silos which will exclude moisture and contaminants. Cement shall be furnished in suitable bags used for packaging cements. Labeling of packages shall clearly define contents, manufacturer, batch identification, etc. Aggregate stockpiles shall be arranged and used in a manner to avoid excessive segregation and to prevent contamination with other materials or with other sizes of aggregates. Epoxy and acrylic modified cement shall be stored in accordance with the manufacturer's recommendations.

PART 2 PRODUCTS

2.1 MATERIALS

The manufacturer and products listed represent the nature and quality of products required for satisfactory performance of the work and are not intended to prohibit the selection of equivalent products by other manufacturers.

2.1.1 FRAPMC

Concrete mortar shall be a self-leveling, acrylic polymer modified cementitious system consisting of two components. FRAPMC shall comply with ACI 548.1, except as modified herein.

Component A: Prepackaged liquid polymer emulsion of acrylic polymer and additives.

Component B: Mixture of cements, aggregates, and admixtures.

Mortar shall not contain chlorides, nitrates, added gypsum, lime, or high alumina cements. Accelerators and admixtures shall be premixed as part of either Component A or B. Mortar shall be noncombustible before and after curing. Color of cured mortar shall be concrete gray. Mortar shall require no bonding agent to be applied to the substrate prior to placing the mortar to achieve the specified performance. Cured mortar shall not produce a vapor barrier. Mortar shall be thermally compatible with existing concrete and be freeze thaw-resistant. The mortar shall be compatible with polypropylene fiber. The addition of fiber shall not have an adverse affect on the performance of the mortar.

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2.1.2 Fiber reinforcement

Fiber reinforcement shall be 1-1/2 inch length, collated, fibrillated polyolefin fiber made from virgin polypropylene.

2.1.3 Expansion anchor

Expansion anchor shall be 3/4 inch anchor bolt, including expansion sleeve and nut conforming to Fed Spec FF-S-325, Group VIII, Type 2. Nuts shall be hex type and shall conform to ASTM A 563.

2.1.4 Coarse aggregate

Coarse aggregate shall meet all the requirements of the mortar manufacturer, be saturated surface dry, and conform to ASTM C 33, size designation No. 8. Crushed limestone will not be permitted.

2.1.5 Water

Water shall be fresh and free from injurious amount of oil, acid, salt, alkali, organic matter, or other deleterious substances. Water shall be potable. River water shall not be used.

2.1.6 Joint Materials

a. Elastomeric Joint Sealant. Sealant shall be a cold-applied type with 1 component and a polyurethane base. Sealant shall conform to either ASTM D 3405, or ASTM C 920, Type S, Grade P, Class 25, Use T or M. If recommended by the manufacturer, the joint sealant shall be used with the manufacturer's specified primer.

b. Bond Breaker. Bond breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials. Joint sealant shall be used with the manufacturer's specified primer.

c. Joint Backer Rod. The backup material shall be compressible, nonshrink, nonreactive with sealant, and nonabsorbent material type, such as extruded butyl or polychloroprene foam rubber, oversized 30 to 50 percent.

d. Oakum. Dry, unoiled, and twisted jute.

2.1.7 Concrete Repair Upstream Left Corner

Concrete for the Concrete Repair Upstream Left Corner shall be as specified in SECTION: CONCRETE FOR MINOR STRUCTURES.

PART 3 EXECUTION

3.1 SURFACE AND JOINT REPAIR

3.1.1 Surface Preparation

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The Contractor shall sound the concrete surfaces of the walls in the presence of the Contracting Officer to determine the actual extent of concrete removal required. Approximate locations and areas are indicated on the drawings. Actual locations and limits of deteriorated concrete shall be determined by visual inspection and by rapping with a hammer or 5/8 inch steel rod. A dull or hollow sound from the rapping shall indicate that the concrete is defective. The Contractor shall mark the lines on the concrete that shall be the limits of concrete removal as approved by the Contracting Officer. Limits of repair at the joints will be as shown on the drawings or as otherwise directed, based on the above methods. Saw-cut perimeter of areas to be repaired as indicated and remove all deteriorated concrete. Sawing shall be in accordance with CSDA W-1, except as specified herein and removal shall be by chipping hammers or other approved means. The depth of removal shall be as approved by the Contracting Officer, but not less than the minimum as indicated on the drawings, nor more than is required to reach sound concrete. All reinforcement and embedded metalwork shall be preserved. After removal of unsound concrete, surfaces shall be thoroughly cleaned with sandblasting, unless otherwise approved. Surface cleaning shall be done from the top towards the bottom on vertical surface repairs and shall be continued until all debris and loose fragments are removed. After sandblasting, the surface shall be rinsed with clean water. Care shall be taken so that the sandblasting does not leave a polished surface.

3.1.2 Anchors

Install anchors in accordance with the manufacturer's recommendations.

3.1.3 Mixing FRAPMC

FRAPMC shall be used for all repairs in this paragraph, except where shown otherwise on the drawings. The mortar shall be mixed mechanically in an appropriate sized mortar mixer and in quantities that can be placed within 30 minutes, or less if recommended by the manufacturer. The addition rate of aggregate shall not exceed 42 pounds per 0.5 cu ft of mortar. Crushed, angular, or dry stone will cause a stiffer mix. Fibers shall be used at the rate of 1.6 pounds per cu yd of mixture. At the beginning of each mixer batch, for one to two minutes or as recommended by the fiber manufacturer's instructions, add and mix the fibers and coarse aggregate with a portion of Component A to disperse and condition the fibers. After the fibers are adequately conditioned and dispersed, add and mix, for three minutes or as designated by the manufacturer, Component B and the remainder of Component A as required to obtain a uniform consistency. Additional amounts of Component A may be necessary for workability if the manufacturer's instructions and Component A quantity do not allow for the inclusion of fibers and aggregate.

3.1.4 Placing FRAPMC

Concrete surfaces against which FRAPMC is to be placed shall be damp with no glistening water evident at the time of application. No bond coat or primer shall be used. Surfaces shall be between 50 F and 80 F at the time of placement. The FRAPMC shall be poured in place using appropriate formwork and so that all voids in the repaired area are filled. Concrete

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replacement at joints shall be made on both sides of the joint at the same time. Suitable means shall be provided to maintain the joint slot as indicated.

3.1.5 Curing FRAPMC

Curing and finishing shall be in accordance with the manufacturer's instructions. Unless otherwise specified, FRAPMC shall be cured for a minimum of 24 hours using wet burlap, polyethylene sheeting, or a nonsolvent FRAPMC compatible curing compound. The newly placed FRAPMC shall be maintained at 50 F for at least the first 24 hours and protected from freezing for an additional four days.

3.2 JOINT SEALANT INSTALLATION

3.2.1 Sequence

Concrete repairs will be performed at monolith joints as indicated and specified. The Contractor shall be responsible for keeping each joint free of debris. Prior to installation of any joint materials, the sides of the joints shall be cleaned by sandblasting as indicated on the drawings. Installation of oakum material and joint backer material and joint sealant shall be started at each joint no sooner than three days after completion of repairs at that joint. Care shall be exercised to avoid application of joint material on the face of the exposed concrete surfaces.

3.2.2 Joint Sealer

Joints shall not be sealed when the sealant, air, or concrete temperature is less than 40 degrees F. Bond breaker and backup material shall be installed where required. Joints shall be primed and filled flush with joint sealant in accordance with the manufacturer's recommendations and as shown on the drawings. Joint sealant shall be installed no sooner than three days after concrete repairs have been completed, at each joint.

3.3 TESTING FRAPMC

Test specimens shall be prepared in sets of three 4 inch by 8 inch cylinders, in accordance with ASTM C 31, taken from the mixes of each day's placement. Testing shall be in accordance with ASTM C 39. Of each set of three cylinders made, one shall be tested at three days and two at 28 days.

Testing shall be performed by an independent testing laboratory at the expense of the Contractor. FRAPMC shall have a compressive strength of not less than 2,500 psi at three days and not less than 4,500 psi at 28 days. Bond strength as tested in accordance with ASTM C 882 shall not be less than 1,100 psi at 28 days.

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SECTION 03903

CRACK INJECTION

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 321	(1997) Bond Strength of Chemical-resistant Mortars.
ASTM C 881	(1990) Epoxy-Resin-Base Bonding Systems for Concrete (AASHTO M235)
ASTM D 790	(1996) Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
ASTM D 412	(1998a) Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension
ASTM D 1042	(1993) Linear Dimensional Changes of Plastics Under Accelerated Service Conditions
ASTM D 3574	(1995) Flexible Cellular Materials-Slab, Bonded, and Molded Urethane Foams

1.2 SUBMITTALS

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

SD-01 Data; FIO

Manufacturer's Data and Instructions; FIO

The Contractor shall submit the manufacturer's technical data indicating the material properties. The technical data shall include description of surface sealant, equipment, and installation procedures for the injection work. The manufacturers instructions for use, including preparatory work,

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injection, and curing shall be submitted.

SD-13 Certificates

Injection Materials; FIO

Prior to use of injection materials (epoxy adhesive and polyurethane chemical grout), the Contract shall submit a certificate of compliance for each manufacturer's batch of material proposed for use in the contract work stating that the material complies with the contract requirements. Certificates shall include actual test results of each batch of material proposed.

1.3 MEASUREMENT AND PAYMENT

1.3.1 Preparation

Preparation of the crack for injection will be measured for payment by the linear feet of crack prepared. Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified, including cleaning the crack and surrounding surface, installing the ports, sealing the crack, removing the ports after completion of the work, drilling injection holes, flushing the crack, and any incidental work.

1.3.2 Injection

Injection for crack repair (Epoxy Injection and Polyurethane Chemical Grout Injection) will be measured for payment by the gallon of material injected.

Payment will be made at the contract unit price and will constitute full compensation for furnishing the materials and constructing the work complete in place as specified.

1.4 CONTRACTOR QUALIFICATIONS

1.4.1 Applicator's Qualifications

Each applicator engaged in the injection process contract work shall have a minimum of five years of documented experience in successful epoxy injection and successful polyurethane chemical grout injection repair projects on concrete structural components. Each applicator shall have satisfactorily completed an instruction program in the methods of restoring concrete structures utilizing the specific injection process required, and the operation, maintenance, and troubleshooting of equipment used in the repair work.

PART 2 PRODUCTS

2.1 DELIVERY AND STORAGE

Epoxy injection and polyurethane chemical grout injection materials shall be delivered to the project work site in clearly labeled, unopened containers. Each label shall clearly indicate:

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- (1) Manufacturer's name and address.
- (2) Manufacturer's product name or product number.
- (3) Manufacturer's lot number.
- (4) Mix ratio.
- (5) SPI hazardous material rating and appropriate warnings for handling.

2.2 MATERIALS

2.2.1 Surface Sealant

The surface sealant shall be an epoxy paste with adequate strength and adhesion to confine the injection adhesive in the crack being repaired until the injection adhesive has properly cured. After the injection adhesive has cured, the surface seal shall be removed and disposed. Surface sealant shall be as recommended by the manufacturer of the epoxy adhesive for injection, and shall be suitable for uses under the conditions which the contract work is to be performed.

2.2.2 Epoxy Injection Material

Epoxy adhesive shall meet the requirements of ASTM C881, Type 1, Grade 1. The appropriate Class shall be used for the temperature conditions during the work. This material is a two-component, 100 percent solids, low viscosity, water insensitive material specially suited to injection for sealing of concrete cracks and joints. The adhesive shall meet or exceed the following properties: flexural strength of 10,000 pounds per square inch in accordance with ASTM D 790 and bond strength of 500 pounds per square inch in accordance with ASTM C 321.

2.2.3 Polyurethane Chemical Grout Injection Material

Polyurethane chemical grout injection material shall be a single component, hydrophobic, water activated, 100% solids, polyurethane expanding flexible foam for permanent water cut-off in moving cracks or joints and shall be designed for grouting joints or repairing leakages in concrete structures. The material shall cure to a tough, flexible, non-toxic, closed-cell, polyurethane foam, forming a flexible plug in the crack. The material shall meet or exceed the following properties: Density of 12 to 30 lbs/cubic foot in accordance with ASTM D 3574, Tensile Strength of 150 psi in accordance with ASTM D 412, Elongation of 250% in accordance with ASTM D 3574, and Shrinkage of less than 4% in accordance with ASTM D 1042.

PART 3 EXECUTION

3.1 LIMITS

Only those cracks shown on the drawings or as approved by the Contracting Officer will be injected. The location of cracks to be injected will be determined following the demolition of the concrete.

3.2 EPOXY INJECTION

3.2.1 Equipment

3.2.1.1 Type

Equipment used to meter and mix the two injection adhesive components and inject the mixed adhesive into the cracks shall be a nozzle head mixing and positive displacement type.

3.2.1.2 Discharge Pressure

Injection equipment shall have capability of discharging the mixed adhesive at any pre-set pressure up to 300 pounds per square inch and maintaining that pressure. The mixing head of the injection lines shall be attached to a pressure check device. The pressure check device shall consist of two independent valved nozzles capable of controlling flow rate and pressure by opening or closing the valve. There shall be a pressure gage capable of sensing the pressure buildup behind each valve.

3.2.1.3 Volume Ratio Tolerance.

Equipment shall be capable of maintaining the volume ratio for the adhesive prescribed by the adhesive manufacturer within + 5 percent by volume at any discharge pressure up to 300 pounds per square inch. The ratio check device shall consist of two independent valved nozzles capable of controlling flow rate and back pressure by opening or closing the valve to restrict material flow. The equipment shall have a pressure gage capable of sensing the back pressure behind each valve.

3.2.2 Procedure

3.2.2.1 Crack Preparation

Prior to sealing surfaces, the concrete surfaces along each crack shall be cleaned of loose matter, dirt, laitance, oil, grease, salt, and other contaminants. The manufacturer's recommendations shall be followed for cleaning each area to receive the epoxy adhesive. The surfaces shall be sealed with manufacturers recommended material to contain the epoxy.

3.2.2.2 Injection

Injection shall not proceed unless the temperature of the concrete to receive the epoxy adhesive is at least 40 degrees F. Openings in the surface seal for the entry ports shall be established along the crack. The distance between the entry ports shall be not less than 6 inches nor greater than 18 inches. Injection of the epoxy adhesive into each crack shall begin at the entry port at the lower end of the crack and proceed in an upward direction. Injection shall continue at the first port until the epoxy adhesive appears at the next adjacent port. The first port shall then be plugged and injection started at the second port until the epoxy adhesive appears at the next port. The entire crack shall be injected in the same sequence.

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3.2.2.3 Finishing

Curing of the epoxy adhesive shall be in accordance with the manufacturer's recommendations, except that the ambient temperature shall not be less than 40 degrees F. After the epoxy adhesive has cured, the surface seal and special fittings shall be removed. The surface along the crack shall be ground flush. Indentations and protrusions caused by placement of the entry ports or other causes shall be removed.

3.2.3 Testing

At all times during the course of the contract work, complete and accurate records shall be kept and made available to the Contracting Officer. The Contractor shall conduct additional tests of the volume ratio and pressure in the Contracting Officer's presence if requested.

3.2.3.1 Pressure Test

The valves on the pressure check device shall be closed and the equipment operated until the gage pressure on each line reads 300 pounds per square inch; the pumps shall then be stopped and the gage pressure shall not drop below 190 pounds per square inch for at least 3 minutes. The pressure check test shall be run for each injection unit at the beginning and at the end of each day that the unit is used in the contract work.

3.2.3.2 Volume Ratio Test.

The mixing head of the injection equipment shall be disconnected and the two adhesive components shall be pumped simultaneously through the ratio check device. The discharge pressure shall be adjusted to 300 pounds per square inch for both adhesive components. Both adhesive components shall be simultaneously discharged into separate calibrated containers. The amounts discharged into the calibrated container simultaneously during the same time period shall be compared to determine the mix ratio. The ratio test shall be run for each injection unit at the beginning and at the end of every day that the unit is used in the work.

3.3 POLYURETHANE CHEMICAL GROUT INJECTION

The equipment and procedures used to inject the Polyurethane Chemical Grout shall be as recommended by the manufacturer and as submitted by the Contractor.

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SECTION 05500

MISCELLANEOUS METAL

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 53	(1996) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A 123	(1989a) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 653	(1996) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A 780	(1993a) Repair of Damaged and Uncoated Areas of Hot-Dipped Galvanized Coatings
ASTM A 924	(1996a) Steel Sheet, Metallic-Coated by the Hot-Dip Process

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(1994) Structural Welding Code - Steel
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1.2 SUBMITTALS

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

SD-04 Drawings

Miscellaneous Metal Items; GA.

Detail drawings indicating material thickness, type, grade, and class; dimensions; and construction details. Drawings shall include catalog cuts,

RED LAKE CONTROL STRUCTURE

erection details, manufacturer's descriptive data and installation instructions, and templates. Detail drawings for the following items: Handrail, Walers, Tie Rods and Accessories.

SD-06 Instructions

Tie Rods; GA.

Instructions and plan for tensioning the tie rods.

SD-09 Reports

Tie Rods; GA.

Certified test reports for materials tests and analyses shall be submitted for approval.

SD-13 Certification

Tie Rods and Accessories; GA.

Certification that the tie rods and accessories meet the specifications.

SD-14 Samples

Miscellaneous Metal Items; FIO.

Samples of the following items: Tie rod 2 foot sample, Anchor bolts 1 of each type to be used. Samples shall be full size, taken from manufacturer's stock, and shall be complete as required for installation in the structure. Samples may be installed in the work, provided each sample is clearly identified and its location recorded.

1.3 GENERAL REQUIREMENTS

The Contractor shall verify all measurements and shall take all field measurements necessary before fabrication. Welding to or on structural steel shall be in accordance with AWS D1.1. Items specified to be galvanized, when practicable and not indicated otherwise, shall be hot-dip galvanized after fabrication. Galvanizing shall be in accordance with ASTM A 123, ASTM A 653, or ASTM A 924, as applicable. Exposed fastenings shall be compatible materials, shall generally match in color and finish, and shall harmonize with the material to which fastenings are applied. Materials and parts necessary to complete each item, even though such work is not definitely shown or specified, shall be included. Poor matching of holes for fasteners shall be cause for rejection. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall provide strength and stiffness. Joints exposed to the weather shall be formed to exclude water.

1.3.1 Zinc Coating Repair

Where zinc coatings are destroyed by cutting, welding or other causes the affected areas shall be regalvanized. Coatings 2 ounces or heavier shall

RED LAKE CONTROL STRUCTURE

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 repaired in accordance with ASTM A 780.

1.4 WORKMANSHIP

Miscellaneous metalwork shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces. Welding shall be continuous along the entire area of contact except where tack welding is permitted. Exposed connections of work in place shall not be tack welded. Exposed welds shall be ground smooth. Exposed surfaces of work in place shall have a smooth finish, and unless otherwise approved, exposed riveting shall be flush. Where tight fits are required, joints shall be milled. Corner joints shall be coped or mitered, well formed, and in true alignment. Work shall be accurately set to established lines and elevations and securely fastened in place. Installation shall be in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

1.5 ANCHORAGE

Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place.

PART 2 PRODUCTS

2.1 HANDRAILS

Handrails shall be as indicated.

2.1.1 Steel Handrails

Steel handrails shall be steel pipe conforming to ASTM A 53. Steel railings shall be sized as indicated. Railings shall be hot-dip galvanized.

- a. Joint posts, rail, and corners shall be fabricated by the following methods:

- (1) Mitered and welded joints by fitting post to top rail and intermediate rail to post, mitering corners, groove welding joints, and grinding smooth. Railing splices shall be butted and reinforced by a tight fitting interior sleeve not less than 6 inches long.

2.2 WALERS

Steel walers shall be fabricated as indicated on the drawings. Walers shall be hot-dip galvanized.

2.3 TIE RODS

Tie rods shall be fabricated as indicated on the drawings.

RED LAKE CONTROL STRUCTURE

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

All items shall be installed at the locations shown and according to the manufacturer's recommendations. Items listed below require additional procedures as specified.

3.2 ATTACHMENT OF HANDRAILS

Brackets shall be installed where indicated. Splices, where required, shall be made at expansion joints.

3.3 TIE RODS AND WALERS

Tie rods and walers shall be installed as indicated on the drawings. Core holes through concrete where necessary to pass tie rods through existing walls. Core holes shall be done in a neat manner leaving smooth edges and surfaces and shall be no larger than necessary to pass bar through and fill void afterward. Fill void between bar and sides of core hole with grout as specified in Section 03301 NON-SHRINK GROUT.

3.3.1 Tie Rod Tension

After backfilling is completed, tension each tie rod to 10 kips. If any wall movement occurs prior to the end of the tensioning procedure, stop the procedure and contact the Contracting Officer.

-- End of Section --

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DIVISION 05 - METALS

SECTION 05502

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PART 3 EXECUTION (Not Applicable)

RED LAKE CONTROL STRUCTURE

-- End of Section Table of Contents --

RED LAKE CONTROL STRUCTURE

SECTION 05502

METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(1996) Carbon Structural Steel
ASTM A 53	(1996) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A 307	(1994) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
ASTM A 325	(1997) High Strength Bolts for Structural Steel Joints
ASTM F 436	(1993) Hardened Steel Washers
ASTM A 722	(1998) Uncoated High Strength Steel Bars for Prestressing Concrete
ASTM A 775	(1997) Epoxy-Coated Reinforcing Steel Bars
ASTM D 3963	(1997) Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars

ASME INTERNATIONAL (ASME)

ASME B18.2.1	(1981; Supple 1991; R 1992) Square and Hex Bolts and Screws (Inch Series)
ASME B18.2.2	(1987; R 1993) Square and Hex Nuts (Inch Series)
ASME B18.21.1	(1994) Lock Washers (Inch Series)
ASME B18.22.1	(1965; R 1990) Plain Washers

COMMERCIAL ITEM DESCRIPTIONS (CID)

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CID A-A-55614

(Rev A) Shield, Expansion (Non-Drilling
Expansion Anchors)

1.2 LUMP SUM PRICE

1.2.1 Handrailing

1.2.1.1 Payment

Payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing all operations necessary for the handrailing fabrication and installation.

1.2.1.2 Unit of Measure

Unit of measure: lump sum.

1.2.2 Anchor System

1.2.2.1 Payment

Payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing all operations necessary for the tie rod and waler fabrication and installation including all fasteners and the coring of holes through the concrete walls and filling core holes as required.

1.2.2.2 Unit of Measure

Unit of measure: lump sum.

PART 2 PRODUCTS

2.1 MISCELLANEOUS METALS AND STANDARD METAL ARTICLES

Miscellaneous metal materials and standard metal articles shall conform to the respective specifications and other designated requirements. Sizes shall be as specified or shown. Where material requirements are not specified, materials furnished shall be suitable for the intended use and shall be subject to approval.

2.1.1 Structural Steel

ASTM A 36/A 36M

2.1.2 Steel Plates

2.1.2.1 Structural

ASTM A 36/A 36M

2.1.3 Steel Pipes and Pipe Fittings

2.1.3.1 Pipes

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ASTM A 53, Type E or S, Grade A or B, seamless or electric-resistance welded, galvanized, nominal size and weight class or outside diameter and nominal wall thickness as shown, plain ends.

2.1.4 Bolts, Nuts, and Washers

Bolts, nuts, and washers shall be of the material, grade, type, class, style and finish indicated or best suited for intended use.

2.1.4.1 High-Strength Bolts, Nuts, and Washers

ASTM A 325, Type 1, hot-dip galvanized.

2.1.4.2 Bolts, Nuts, and Washers (Other Than High-Strength)

- a. Bolts and Nuts - ASTM A 307, Grade A, hot-dip galvanized.
- b. Bolts - ASME B18.2.1.
- c. Nuts - ASME B18.2.2.
- d. Washers
 - (1) Plain Washers - ASME B18.22.1, Type B.
 - (2) Lock Washer - ASME B18.21.1.
 - (3) Beveled Washers - ASTM F 436, Type 1, Beveled.

2.1.5 Tie Rods

Each tie rod shall consist of a single, deformed bar of steel encased for its full length in plastic sheathing. The annular space between the bar and the plastic sheathing shall be grouted over its full length, prior to installation.

2.1.5.1 Steel Tendon

The steel tendons shall be of the thread bar type with rolled on threads, diameter as indicated on the drawings, Grade 150 KSI conforming to ASTM Designation A-722, Type II, cold stretched and stress relieved.

2.1.5.2 Plastic Sheathing

Plastic sheathing shall be poly-vinylchloride, having a minimum compressive strength of 15,000 psi and a minimum tensile strength of 7,000 psi. Material shall be free of water-soluble chlorides and other ingredients, which might enhance corrosion, hydrogen embrittlement or stress corrosion on the steel tendon. The plastic shall be non-reactive with the grout and its ingredients. The plastic sheathing shall be gas and water-tight, resistant against chemical attacks and aging. Corrosion protection for the buried end of the rod shall include a grouted pvc cap.

2.1.5.3 Accessories

Steel bearing plates shall be the size indicated on the drawings with a centered hole 1/8-inch larger in diameter than the anchor and shall conform to ASTM A-36. Hex and anchor nuts shall be hexagonal head, heavy-duty type, conforming to ASTM A-325 or the bar manufacturer's specifications. Angled rods shall be provided with spherical nuts or beveled washers as recommended by the manufacturer. Corrosion protection for the exposed end of the rod shall include a grouted steel cap. Couplings, anchor nuts, anchor plates, PVC sheathing, end caps and other accessories shall be provided by the same manufacturer as the tie rod.

2.1.5.4 Anchorage Components

All anchorage components shall develop at least 95% of the minimum guaranteed ultimate strength of the bar tendon.

2.1.6 Handrail Expansion Anchors

CID A-A-55614 type as required, stainless steel, as submitter and approved.

2.2 SHOP FABRICATED METAL ITEMS

Shop fabricated metal items shall conform to the requirements and details as specified or shown.

2.2.1 Railings

Railings shall be of the type specified and shown and shall be furnished and installed complete with all fittings, brackets, fasteners, sleeves, anchors, and other appurtenances as shown and as required for proper installation.

2.2.1.1 Materials

Steel railings shall be of steel as specified in paragraph PIPE. Sleeves shall be of the same material as the rails and posts or approved compatible materials. Plates and other appurtenances shall be of steel as specified in paragraph STRUCTURAL STEEL.

2.2.1.2 Fabrication

Rigid joints in railings shall be of welded assembly and shall be flush-finished. Welded joints shall be reinforced with tight-fitting interior sleeves and shall be assembled by mitering and welding joining rails and posts. Expansion joints in railings shall be an inner-sleeved slip-joint, with one end of the sleeve secured to one rail and the ends of the adjoining rails separated a minimum of 1 inch in the installed position. Expansion joints shall be located in rails near the intersection of rails and posts. Bends in railings shall be made in a manner that railings are not crushed and shall maintain their original cross-sectional shape. Welds shall be ground smooth. Railings shall be free of burrs, sharp corners, and sharp edges.

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2.2.1.3 Installation

Railings shall be installed as specified and shown.

2.2.2 Walers

Walers shall be of the type specified and shown and shall be furnished and installed complete with all bearing plates, stiffener plates, fasteners, sleeves, and other appurtenances as shown and as required for proper installation.

2.2.2.1 Materials

Walers shall be of steel as specified in paragraph STRUCTURAL STEEL. Plates and other appurtenances shall be of the same material.

2.2.2.2 Fabrication

Walers shall be fabricated as indicated on the drawings.

2.2.2.3 Installation

Walers shall be installed as specified and shown.

2.2.3 Tie Rods

Tie rods shall be of the size shown and shall be furnished and installed complete with all plates, fasteners, and other appurtenances as shown and as required for proper installation.

2.2.3.1 Materials

Tie rods shall be of steel as specified in paragraph TIE RODS. Plates and other appurtenances shall be as specified in paragraph STRUCTURAL STEEL. Hex and anchor nuts shall be hexagonal head, heavy duty type, conforming to ASTM A 325 or the bar manufacturer's recommendations.

2.2.3.2 Fabrication

Tie rods shall be fabricated as indicated on the drawings.

2.2.3.3 Installation

Tie rods shall be installed as specified and shown.

PART 3 EXECUTION (Not Applicable)

-- End of Section --

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2.2 PAINT FORMULATIONS

2.2.1 Formula V-766e, Vinyl-Type White (or Gray) Impacted Immersion Coating

2.2.2 Formula VZ-108d, Vinyl-Type Zinc-Rich Impacted Immersion Coating

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2.3.1.2 Zinc Dust

2.3.1.3 Iron Oxide

2.3.1.4 Titanium Dioxide

2.3.1.5 Suspending Agent E

2.3.1.6 Suspending Agent F

2.3.2 Resins, Plasticizer, and Catalyst

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2.3.2.2 Vinyl Resin, Type 3

2.3.2.3 Vinyl Resin, Type 4

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3.2.11.2 Vinyl Zinc-Rich Primer

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SECTION 09965

PAINTING: HYDRAULIC STRUCTURES

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|-------------|---|
| ANSI Z87.1 | (1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection |
| ANSI Z358.1 | (1990) Emergency Eyewash and Shower Equipment |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- | | |
|-------------|---|
| ASTM D 153 | (1984; R 1996) Specific Gravity of Pigments |
| ASTM D 281 | (1995) Oil Absorption of Pigments by Spatula Rub-Out |
| ASTM D 520 | (1984; R 1995) Zinc Dust Pigment |
| ASTM D 561 | (1982; R 1996) Carbon Black Pigment for Paint |
| ASTM D 841 | (1995) Nitration Grade Toluene |
| ASTM D 1045 | (1995) Sampling and Testing Plasticizers Used in Plastics |
| ASTM D 1152 | (1989; R 1993) Methanol (Methyl Alcohol) |
| ASTM D 1153 | (1994) Methyl Isobutyl Ketone |
| ASTM D 1186 | (1993) Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base |
| ASTM D 1200 | (1994) Viscosity by Ford Viscosity Cup |
| ASTM D 1210 | (1996) Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage |
| ASTM D 1400 | (1994) Nondestructive Measurement of Dry |

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	Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base
ASTM D 2917	(1991; R 1994) Methyl Isoamyl Ketone
ASTM D 3721	(1983; R 1991) Synthetic Red Iron Oxide Pigment
ASTM D 4417	(1993) Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM E 1347	(1997) Color and Color-Difference Measurement by Tristimulus (Filter) Colorimetry

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.94	Ventilation
29 CFR 1910.139	Respiratory Protection
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910, Subpart I	Personal Protective Equipment
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.62	Lead
40 CFR 50.6	National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
40 CFR 50.12	National Primary and Secondary Ambient Air Quality Standards for Lead
40 CFR 50, App B	Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere
40 CFR 58, App E	Probe Siting Criteria for Ambient Air Quality Monitoring
40 CFR 60, App A, Mtd 22	Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances

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40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261, App III	Chemical Analysis Test Methods
40 CFR 261, App II, Mtd 1311	Toxicity Characteristic Leaching Procedure (TCLP)
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.22	Number of Copies
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171, Subchapter C	Hazardous Materials Regulations

ENGINEERING MANUALS (EM)

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

GM-40291	(Matte Edition) Munsell Book of Color: Matte Finish Collection
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1996; Errata 96-4) National Electrical Code
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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 84-100	(1984; Supple 1985, 1987, 1988, & 1990) NIOSH Manual of Analytical Methods
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SSPC: THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Guide 6	(1995) Containing Debris Generated During Paint Removal Operations
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SSPC SP 1	(1982) Solvent Cleaning
SSPC SP 3	(1995) Power Tool Cleaning
SSPC SP 5	(1994) White Metal Blast Cleaning
SSPC SP 7	(1994) Brush-Off Blast Cleaning

1.2 TESTING RESULTS

Paint samples have been obtained and tested for chromium and lead. The test results are attached at the end of this section in two laboratory analysis reports dated March 7, 2000 and August 8, 2000. In the report dated March 7, 2000, the reference to "guard rails" refers to the upstream handrails and the reference to "Gate # 2" refers to the hatch cover over gate number 2. In the report dated August 8, 2000, the reference to "gate" refers to roller gate and the reference to "side channel" refers to metal components of the gate recess. In 1990, the gates and metal components of the gate recesses were repainted after removal of the existing paint. All other components including the handrails, hatch covers over the gates, and gate lifts (excluding the stop log grooves) were overcoated without removal of the existing paint.

1.3 LUMP SUM PRICE

1.3.1 Painting: Hydraulic Structures

1.3.1.1 Payment

Payment will be made for costs associated with "Painting: Hydraulic Structures", which includes full compensation for furnishing all materials, equipment, and labor required to paint the hydraulic structures in accordance with this section.

1.3.1.2 Unit of Measure

Unit of measure: lump sum.

1.4 WORK PERFORMANCE

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein and all environmental regulations. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply.

1.5 LEAD PROTECTION PROGRAM

For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a comprehensive, written lead protection program in accordance with 29 CFR 1926.62 and EM 385-1-1 section 06.B.05. The program shall be approved by the Government's designated authority prior to

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starting work and shall include, but is not limited to the following:

- a. Containment Plan
- b. Visible Emissions Monitoring Plan
- c. Ambient Air Monitoring Plan
- d. Water Quality Plan
- e. Soil Quality Plan

1.6 SUBMITTALS

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

SD-08 Statements

Qualifications and Experience; GA.

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

Accident Prevention Plan; GA.

The requirements included in Section 01 of EM 385-1-1 shall be followed by the Contractor when preparing the Accident Prevention Plan. The plan shall be prepared for all sites and shall include, but is not limited to, each of the topic areas listed in Table 1-1 therein and the requirements of paragraph SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects.

Confined Space Procedures; GA.

The Contractor shall develop detailed written standard operating procedures for confined spaces for all job sites in accordance with 29 CFR 1910.146 and as further described in this paragraph.

- a. The contractor shall supply certificates of calibration for all testing and monitoring equipment. The certificates of calibration shall include: type of equipment, model number, date of calibration, firm conducting calibration, and signature of individual certifying calibration.

- b. The procedures shall include methods of inspection of personal protective equipment prior to use.

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c. The procedures shall include work practices and other engineering controls designed to reduce airborne hazardous chemical exposures to a minimum.

d. The procedures shall include specification of the design and installation of ventilation systems which shall provide adequate oxygen content and provide for the dilution of paint solvent vapor, lead, and other toxic particulates within the confined space. In addition, the contractor shall include plans to evaluate the adequacy of air flow patterns.

Respiratory Protection Program; GA.

The Contractor shall develop a comprehensive written respiratory protection program for all job sites in accordance with 29 CFR 1910.139, 29 CFR 1926.62, and Section 05.E of EM 385-1-1.

Airborne Sampling Plan; GA.

The contractor shall develop an Airborne Sampling Plan for all job sites detailing the NIOSH Pub No. 84-100, Factory Mutual, or Underwriters Laboratories approved equipment, equipment calibration procedures, sampling methods, sampling to be performed, and analytical procedures to be used based on the type of work to be performed and anticipated toxic contaminants to be generated. The contractor shall include the name of the accredited laboratory, listed by the American Industrial Hygiene Association (AIHA), to be used to conduct the analysis of any collected air samples. In addition, the contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within 5 working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

Ventilation Assessment; GA.

The contractor shall develop a plan to provide ventilation assessment for all job sites as required by paragraph PAINT APPLICATION, subparagraph VENTILATION.

Medical Surveillance Plan; GA.

The Contractor shall develop a plan to provide medical surveillance to the workforce for all job sites as required in paragraph MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number. Medical records shall be maintained as required by 29 CFR 1910.20.

Waste Classification, Handling, and Disposal Plan; GA.

The Contractor is responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Therefore, the contractor shall develop a Waste Classification, Handling, and Disposal

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Plan for all job sites in accordance with the requirements of 40 CFR 261 and 40 CFR 262. In addition, the following provisions shall be included:

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

Containment Plan; GA.

For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a plan for containing all lead contaminated waste.

The containment shall comply with the requirements of SSPC Guide 6, Class 2. The plan shall include drawings, load-bearing capacity calculations, and wind load calculations. When the design is such that the spent abrasive is allowed to accumulate in quantities greater than 1,000 pounds, and/or impart a significant wind load on the structure, the contractor shall have the drawings approved by a registered structural engineer. The drawings and calculations shall be stamped with the engineer's seal. The contractor shall also identify the type and placement of water booms, methods for anchoring the booms, and the procedures for removing debris.

Visible Emissions Monitoring Plan; GA.

For all job sites where lead is present at greater than 10,000 ppm, a Visible Emissions Monitoring Plan is required for jobsites requiring moderate control on emissions. The Contractor shall develop a plan for monitoring the visible emissions from the project. The time of emissions shall be measured in accordance with 40 CFR 60, App A, Mtd 22. The plan shall also include the provisions for halting work and correcting the containment in the event unacceptable emissions are observed. General statements shall not be used; specific methods, procedures, and details are required. Random emissions from the containment shall not exceed 1 percent

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of the work day. The Contractor shall document each time that the work is halted due to a violation of the visible emissions criteria. Documentation shall include the cause for shutdown and the corrective action taken to resolve the problem.

Ambient Air Monitoring Plan; GA.

a. PM-10 Monitoring Plan - For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a plan for monitoring emissions of particulate matter 10 microns or less in size (PM-10). The plan shall comply with the requirements of EPA regulation 40 CFR 50.6 and shall include provisions for halting work and correcting the containment in the event unacceptable emissions occur. The positioning of air monitoring equipment shall be in accordance with 40 CFR 58, App E, Subpart (8). In addition, a minimum of two PM-10 monitors shall be used at the project site, one down wind from the project and one in the area of greatest public access (e.g., playground, school yard, or homeowner's yard). When the project is in an area where there are critical receptors nearby, monitoring shall be conducted throughout the entire period that abrasive blasting and cleanup operations are performed. Otherwise, monitoring shall be performed 4 of the first 8 days and on a regular basis thereafter for a sum total of 25 percent of the time surface preparation and debris cleanup are performed. Failure to meet air quality regulatory limits shall require air monitoring to be repeated immediately after corrective actions have been taken. The Contractor shall also conduct preproject PM-10 monitoring. The preproject PM-10 monitoring shall be conducted a minimum of 2 weeks prior to the beginning of the project. The monitoring shall continue for a minimum of 3 days to establish background levels. A report of the results shall be submitted to the Contracting Officer within 48 hours and shall include:

- (1) Name and location of jobsite.
- (2) Date of monitoring.
- (3) Time of monitoring (i.e., time monitoring begins and ends each day).
- (4) Identification and serial number of monitoring units.
- (5) Drawing showing specific location of monitoring units.
- (6) Drawing showing specific location of paint removal operation and the method of removal or work activity being performed.
- (7) Wind direction and velocity.
- (8) A flow chart verifying the rate of air flow across the filter throughout the sampling period.
- (9) Name and address of laboratory.
- (10) Laboratory test procedure.

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(11) Laboratory test results.

(12) Signatures of field and laboratory technicians conducting the work.

b. TSP Monitoring Plan - For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a plan for monitoring emissions of Total Suspended Particulates (TSP). The plan shall comply with the requirements of EPA regulation 40 CFR 50.12 and shall include provisions for halting work and correcting the containment in the event unacceptable emissions occur. The positioning of air monitoring equipment shall be in accordance with 40 CFR 58, App E, Subpart (8). In addition, a minimum of two TSP monitors shall be used at the project site, one down wind from the project and one in the area of greatest public access (e.g. playground, school yard, or homeowner's yard). TSP-lead monitoring shall be conducted in accordance with 40 CFR 50, App B. When the project is in an area where there are critical receptors nearby, monitoring shall be conducted throughout the entire period that abrasive blasting and cleanup operations are performed. Otherwise, monitoring shall be performed 4 of the first 8 days and on a regular basis thereafter for a sum total of 25 percent of the time surface preparation and debris cleanup are performed. Failure to meet air quality regulatory limits shall require air monitoring to be repeated immediately after corrective actions have been taken. The Contractor shall also conduct preproject TSP monitoring. The preproject TSP monitoring shall be conducted a minimum of 2 weeks prior to the beginning of the project. The monitoring shall continue for a minimum of 3 days to establish background levels. A report of the results shall be submitted to the Contracting Officer within 48 hours and shall include:

- (1) Name and location of jobsite.
- (2) Date of monitoring.
- (3) Time of monitoring (i.e., time monitoring begins and ends each day).
- (4) Identification and serial number of monitoring units.
- (5) Drawing showing specific location of monitoring units.
- (6) Drawing showing specific location of paint removal operation and the method of removal or work activity being performed.
- (7) Wind direction and velocity.
- (8) A flow chart verifying the rate of air flow across the filter throughout the sampling period.
- (9) Name and address of laboratory.
- (10) Laboratory test procedure.

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(11) Laboratory test results.

(12) Signatures of field and laboratory technicians conducting the work.

Water Quality Plan; GA.

For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a plan to ensure that no lead is released into bodies of water or storm sewers. Therefore, NPDES permits per EPA regulation 40 CFR 122 are not required for the project. The plan shall include provisions for halting work if spills or emissions are observed entering into bodies of water or found in areas where storm water runoff could carry the debris into bodies of water or storm sewers. The plan shall also address cleanup and reporting procedures. In the event that there are any releases of lead paint debris into the waterways, with reportable quantities of hazardous substances designated pursuant to Section 311 of the Clean Water Act, they shall be reported to the EPA in accordance with 40 CFR 117 and 40 CFR 355. Releases or spills that carry into waterways or storm sewers shall be thoroughly documented. The documentation shall include the time and location of the release, amount of material released, actions taken to clean up the debris, amount of debris recovered, and corrective action taken to avoid a reoccurrence. Releases shall also be reported to the Coast Guard and other state and local authorities as appropriate. If the release is equivalent to 10 pounds or more of lead-containing material in a 24-hour period, it is considered to be a reportable quantity under CERCLA. The Contractor shall comply with 40 CFR 302.

Soil Quality Plan; GA.

For all job sites where lead is present at greater than 10,000 ppm, the Contractor shall develop a plan to establish and implement practices and procedures for preventing contamination of the soil from the lead removal operation. The plan shall include provisions for halting the work should soil contamination occur, correcting the deficiencies responsible for the contamination, and provide procedures for removing and replacing contaminated soil. Unless otherwise directed by the Contracting Officer, soil shall be considered to have been contaminated by the Contractor's operation if an increase in the total lead content of 100 PPM or greater over background levels occurs. Soil sampling and lead testing shall be conducted prior to the beginning of the project and after the project is completed. Interim testing may also be performed in the event the Contractor or Contracting Officer wants to confirm that the containment system and work practices continue to provide satisfactory protection of the soil. Unless otherwise directed by the Contracting Officer, the following minimum test locations shall be selected for soil analysis. Two locations shall be selected beneath or immediately adjacent to the structure being prepared, and additional samples shall be taken within 100 feet in each direction of the project (i.e., N, S, E, W) in which soil is present. The number of soil sample locations shall be sufficient to adequately characterize the soil lead levels within and around the project area. Three composite samples shall be collected at each location. Each

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of the three samples shall be comprised of five individual plugs of soil combined in a single bag. The composite samples at each location shall be collected using the following procedure:

- a. Place a 1-square-foot template at each location.
- b. Remove a sample of soil 3/4 inch in diameter and 1/2 inch in depth at the center of the template and at each of the four corners. Place the five soil plugs into a single bag. This represents one of the three samples to be removed at a given location.
- c. Move the template 1 inch in any direction and repeat the process to collect the second sample. Place all plugs in a separate bag. Move the template 1 inch farther to collect the third sample.
- d. Identify each sample bag with the date, specific location of the sample, name and signature of the sampling technician, and complete chain of custody records.
- e. It is critical that the specific location of each sample be thoroughly measured and documented as the final project testing (and any interim testing) must be sampled in the precise locations.

One of the three samples collected at each location shall be analyzed for lead content. One of the remaining two samples shall be maintained by the Contractor for the duration of the project and the other by the Contracting Officer in the event a reanalysis is required. The samples shall be analyzed in accordance with EPA testing guidance as published in 40 CFR 261, App III, by a laboratory listed by the American Industrial Hygiene Association (AIHA) as being proficient in conducting the test. The Contractor shall note that if it is determined that contamination of the soil has occurred as a result of the paint removal operations, TCLP testing will be employed to determine if the soil must be handled and disposed of as a hazardous waste. The initial sampling of the soil for total lead content does not establish whether the soil would be considered hazardous by TCLP testing. As a result, at the Contractor's option, additional prejob soil samples may be removed (minimum of 100 grams is required for a single test at each site) to conduct TCLP testing to establish whether the soil would be classified as hazardous prior to project startup. In the event that there is a release of lead paint debris onto the soil and if the release is 10 pounds or more of lead-containing material in a 24-hour period, it is considered to be a reportable quantity under CERCLA. The Contractor shall comply with 40 CFR 302. The Contractor shall thoroughly document the occurrence of any spills of lead debris into the soil. The documentation shall include the time and location of the release, amount of material released, actions taken to clean up the debris, amount of debris reclaimed, and corrective action taken to avoid a reoccurrence. The documentation shall be provided to the Contracting Officer and shall also include the results of laboratory testing.

Ambient Air Monitoring Plan for Particulate Emissions; GA.

For all job sites requiring tight control on emissions where lead is not present, the Contractor shall develop a plan for monitoring emissions of

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particulate matter 10 microns or less in size (PM-10). The plan shall comply with the requirements of EPA regulation 40 CFR 50.6 and shall include provisions for halting work and correcting the containment in the event unacceptable emissions occur. The positioning of air monitoring equipment shall be in accordance with 40 CFR 58, App E, Subpart (8). In addition, a minimum of two PM-10 monitors shall be used at the project site, one down wind from the project and one in the area of greatest public access (e.g. playground, school yard, or homeowner's yard). When the project is in an area where there are critical receptors nearby, monitoring shall be conducted throughout the entire period that abrasive blasting and cleanup operations are performed. Otherwise, monitoring shall be performed 4 of the first 8 days, and on a regular basis thereafter for a sum total of 25 percent of the time surface preparation and debris cleanup are performed. Failure to meet air quality regulatory limits shall require air monitoring to be repeated immediately after corrective actions have been taken. The Contractor shall also conduct preproject PM-10 monitoring. The preproject PM-10 monitoring shall be conducted a minimum of 2 weeks prior to the beginning of the project. The monitoring shall continue for a minimum of 3 days to establish background levels. A report of the results shall be submitted to the Contracting Officer within 48 hours and shall include:

- a. Name and location of jobsite.
- b. Date of monitoring.
- c. Time of monitoring (i.e., time monitoring begins and ends each day).
- d. Identification and serial number of monitoring units.
- e. Drawing showing specific location of monitoring units.
- f. Drawing showing specific location of paint removal operation and the method of removal or work activity being performed.
- g. Wind direction and velocity.
- h. A flow chart verifying the rate of air flow across the filter throughout the sampling period.
- i. Name and address of laboratory.
- j. Laboratory test procedure.
- k. Laboratory test results.
- l. Signatures of field and laboratory technicians conducting the work.

Visible Emissions; GA.

For all job sites requiring tight control on emissions where lead is not present, the Contractor shall develop a plan monitoring the visible emissions from the project. The time of emissions shall be measured in accordance with 40 CFR 60, App A, Mtd 22. The plan shall also include the

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provisions for halting work and correcting the containment in the event unacceptable emissions are observed. General statements shall not be used; specific methods, procedures, and details are required. Random emissions from the containment shall not exceed 1 percent of the work day. The Contractor shall document each time that the work is halted due to a violation of the visible emissions criteria. Documentation shall include the cause for shutdown and the corrective action taken to resolve the problem.

SD-14 Samples

Special Paint Formulas; GA.

Samples of special paint formulas, listed in paragraph PAINT FORMULATIONS, shall be submitted. For all vinyl-type paints submitted for laboratory testing, separate 1/2-pint samples of ingredient raw 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. For all epoxy type paints submitted for laboratory testing, a list of ingredient raw materials identifying commercial name, trade designation, manufacturer, batch or lot number, and such other data as may be required shall be furnished.

Specification and Proprietary Paints; GA.

Federal, Military, Commercial Item Description, and SSPC: The Society for Protective Coatings specification paints are those formulated to meet federal, military, government and industry specifications. When the required quantity of any type is 50 gallons or less, the Contractor can submit:

- a. A certified test report showing the results of required tests made on the material and a statement that it meets all of the specification requirements.
- b. A certified test report showing the results of required tests made on a previous batch of paint produced by the same firm using the same ingredients and formulation except for minor differences necessitated by a color change and a statement that the previous batch met all of the specification requirements. A report of tests on the proposed batch showing the following properties applicable to the material specifications shall be furnished: color, gloss, drying time, opacity, viscosity, weight per gallon, and fineness of grind.
- c. A proprietary paint - When the required quantity of a particular type or color of a paint 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. Proprietary paints are any which do not follow the formulas in paragraph PAINT FORMULATIONS or the complete specification requirements of the government or industry specifications. To receive consideration, a statement from the supplier that the paint is appropriate as to type, color, and gloss and is a premium grade of paint shall be furnished.

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Thinners; GA.

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

SD-18 Records

Inspections and Operations; GA.

The Contractor shall document and submit records of inspections and operations performed. Submittals shall be made on a daily basis and shall include but are not limited to:

- a. Inspections performed, including the area of the structure involved and the results of the inspection.
- b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.
- c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.
- d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

1.7 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.7.1 Certified Professional

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

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

1.7.2 Certified Laboratory

The Contractor shall provide documentation which includes the name, address, and telephone number of the laboratories to be providing services.

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

1.8 SAMPLING AND TESTING

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

1.9 SAFETY AND HEALTH PROVISIONS

Paragraph SAFETY AND HEALTH PROVISIONS supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.9.1 Abrasive Blasting

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

1.9.1.1 Hoses And Nozzles

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

1.9.1.2 Workers Other Than Blasters

Workers other than blasting operators working in close proximity to

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abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing at least 20 dBA reduction in noise level.

1.9.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.139.

1.9.3 Cleaning with Solvents

1.9.3.1 Ventilation

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

1.9.3.2 Personal Protective Equipment

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

1.9.4 Pretreatment of Metals and Concrete with Acids

1.9.4.1 Personal Protective Equipment

Personnel shall be protected in accordance with 29 CFR 1910, Subpart I.

1.9.4.2 Emergency Equipment

In addition to the requirements of Section 05 of EM 385-1-1, the contractor shall provide an eyewash in accordance with ANSI Z358.1, paragraph (6).

1.9.5 Mixing Epoxy Resin Formulations

1.9.5.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear feet per minute of capture velocity measured at the point where the curing agent and resin contact during mixing.

1.9.5.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1.

1.9.5.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy resin systems shall

be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

1.9.5.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

1.9.6 Paint Application

1.9.6.1 Ventilation

When using solvent-based paint in confined spaces, ventilation shall be provided to exchange air in the space at a minimum rate of 5,000 cubic feet per minute per spray gun in operation. It may be necessary to install both a mechanical supply and exhaust ventilation system to effect adequate air changes within the confined space. All air-moving devices shall be located and affixed to an opening of the confined space in a manner that assures that the airflow is not restricted or short circuited and is supplied in the proper direction. Means of egress shall not be blocked. Ventilation shall be continued after completion of painting and through the drying phase of the operation. If the ventilation system fails or the concentration of volatiles exceeds 10 percent of the LEL (except in the zone immediately adjacent to the spray nozzle), painting shall be stopped and spaces evacuated until such time that adequate ventilation is provided.

An audible alarm that signals system failure shall be an integral part of the ventilation system. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

1.9.6.2 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 20 feet of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and duct work shall be electrically bonded and the bonded assembly shall be grounded.

1.9.6.3 Further Precautions

- a. Workers shall wear nonsparking safety shoes.

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

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

1.9.6.4 Ignition Sources

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

1.9.7 Health Protection

1.9.7.1 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to face seal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered. Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half- and full-facepiece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

1.9.7.2 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 used during confined-space work.

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1.10 MEDICAL STATUS

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

- a. Audiometric testing and evaluation of employees who will work in the noise environments.
- b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).
- c. Medical evaluation shall include, but shall not be limited to, the following:
 - (1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.
 - (2) General physical examination with emphasis on liver, kidney, and pulmonary system.
 - (3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.
 - (4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.
 - (5) For lead-based paint removal, the medical requirements of 29 CFR 1926.62 shall also be included.

1.11 CHANGE IN MEDICAL STATUS

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

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Contracting Officer in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

1.12 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers. Containers for vinyl-type paints shall be lined with a coating resistant to 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 labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS

2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

2.2 PAINT FORMULATIONS

Special paint formulas shall comply with the following:

2.2.1 Formula V-766e, Vinyl-Type White (or Gray) Impacted Immersion Coating

INGREDIENTS	PERCENT BY MASS
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	0.2
	100.0

a. The dispersion of pigment 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 in steel-lined

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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 accurately and diluted with at least four parts of ketone to one part of acid and it shall be slowly incorporated into the finished paint with constant and thorough agitation.

b. The viscosity of the paint shall be between 60 and 90 seconds using ASTM D 1200 and a No. 4 Ford cup.

c. 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 produce a dry paint film having a reflectance of 20-24 (ASTM E 1347). The resulting gray color will approximate Munsell color 2.5PB 5/2 identified in GM-40291.

2.2.2 Formula VZ-108d, Vinyl-Type Zinc-Rich Impacted Immersion Coating

INGREDIENTS	PERCENT BY WEIGHT	POUNDS	GALLONS
COMPONENT A			
Vinyl Resin, Type 3	16.6	109.2	9.65
Methyl Isobutyl Ketone	80.6	528.9	79.30
Suspending Agent E	0.7	4.6	0.28
Suspending Agent F	0.4	2.7	0.19
Methanol	0.5	3.3	0.50
Synthetic Iron Oxide (Red)	1.2	7.9	0.19
	100.0	656.6	90.11
COMPONENT B			
Silane B	100.0	4.1	0.47
COMPONENT C			
Zinc Dust	100.0	550.0	9.42
			100.00 (mixed paint)

a. The iron oxide and suspending agents shall be dispersed into the vehicle (Component A) to a fineness of grind of not less than 4 on the Hegman scale (ASTM D 1210). Grinding in steel-lined containers or using steel-grinding media shall not be permitted. The sole purpose of the iron oxide pigment is to produce a contrasting color. A red iron oxide-type 3 vinyl resin vehicle paste may be used in place of dry iron oxide provided compensating adjustment are made in the additions of Type 3 resin and methyl isobutyl ketone. The finished product with

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zinc dust added shall produce a paint which has a red tone upon drying and a reflectance of not more than 16 (ASTM E 1347).

b. VZ-108d paint shall be supplied as a kit. Each kit shall consist of 4.5 gallons (33.1 pounds) of Component A in a 5-gallon lug closure type pail, 27.5 pounds of zinc dust (Component C) packaged in a 1-gallon plastic pail, and 3 fluid ounces of silane (Component B) packaged in a glass bottle of suitable size having a polyethylene lined cap. The bottle of silane shall be placed on the zinc dust in the 1 gallon pail.

In addition to standard labeling requirements, each container of each component shall be properly identified as to component type and each container label of Component A shall carry the following: MIXING AND APPLICATION INSTRUCTIONS: WARNING - THIS PAINT WILL NOT ADHERE TO STEEL SURFACES UNLESS COMPONENT B IS ADDED. Remove the 3 ounces of bottled Component B (silane) from the Component C (zinc dust) container and add to the base paint Component A) with thorough stirring. Then sift the zinc dust into the base paint while it is being vigorously agitated with a power-driven stirrer and continue the stirring until the zinc dust has been dispersed. The mixed paint shall at some point be strained through a 30-60 mesh screen to prevent zinc dust slugs from reaching the spray gun nozzle. The paint shall be stirred continuously during application at a rate that will prevent settling. If spraying is interrupted for longer than 15 minutes, the entire length of the hose shall be whipped vigorously to redisperse the zinc. If the spraying is to be interrupted for more than 1 hour, the hose shall be emptied by blowing the paint back into the paint pot. Thinning will not normally be required when ambient temperatures are below about 80 degrees F, but when the ambient and steel temperatures are higher, methyl isoamyl ketone (MIAK) or methyl isobutyl ketone (MIBK) should be used. If paint is kept covered at all times, its pot life will be about 8 days.

2.3 INGREDIENTS FOR SPECIAL PAINT FORMULAS

The following ingredient materials and thinners apply only to those special paints whose formulas are shown above in detail.

2.3.1 Pigments and Suspending Agents

2.3.1.1 Carbon Black

Carbon black shall conform to ASTM D 561, Type I or II.

2.3.1.2 Zinc Dust

Zinc dust pigment shall conform to ASTM D 520, Type II.

2.3.1.3 Iron Oxide

Iron oxide, (Dry) synthetic (red), shall conform to ASTM D 3721. In addition, the pigment shall have a maximum oil absorption of 24 and a specific gravity of 4.90 to 5.20 when tested in accordance with ASTM D 281 and ASTM D 153, Method A, respectively. When the pigment is dispersed into specified vinyl paint formulation, the paint shall have colors

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approximating Munsell colors 7.5R 4/8 (light color) and 7.5R 3/6 (dark color) identified in GM-40291, and shall show no evidence of incompatibility or reaction between pigment and other components after 6 months storage.

2.3.1.4 Titanium Dioxide

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.

2.3.1.5 Suspending Agent E

Suspending Agent E shall be a light cream colored finely divided powder having a specific gravity of 2 to 2.3. It shall be an organic derivative of magnesium aluminum silicate mineral capable of minimizing the tendency of zinc dust to settle hard without increasing the viscosity of the paint appreciably. Bentone 14, produced by Rheox, Inc., has these properties.

2.3.1.6 Suspending Agent F

Suspending Agent F shall be a light cream colored finely divided powder having a specific gravity of approximately 1.70. It shall be an organic derivative of a special montmorillonite. Bentone 27, produced by Rheox, Inc., has these properties.

2.3.2 Resins, Plasticizer, and Catalyst

2.3.2.1 Diisodecyl Phthalate

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.

2.3.2.2 Vinyl Resin, Type 3

Vinyl resin, Type 3, shall be a 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 specified formulations, produce results equal to Vinylite resin VYHH, as manufactured by the Union Carbide Corporation.

2.3.2.3 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) 1 percent interpolymerized 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.

2.3.2.4 Ortho-phosphoric Acid

Ortho-phosphoric acid shall be a chemically pure 85-percent grade.

2.3.3 Solvent and Thinners

2.3.3.1 Methanol

Methanol (methyl alcohol) shall conform to ASTM D 1152.

2.3.3.2 Methyl Isobutyl Ketone

Methyl isobutyl ketone (MIBK) shall conform to ASTM D 1153.

2.3.3.3 Methyl Isoamyl Ketone

Methyl isoamyl ketone (MIAK) shall conform to ASTM D 2917.

2.3.3.4 Toluene

Toluene shall conform to ASTM D 841.

2.3.4 Silane B

Silane B for Formula VZ-108d shall be N-beta-(aminoethyl)-gamma-aminopropyltrimethoxy silane. Silane A-1120, produced by the Union Carbide Corporation, and Silane Z-6020, produced by Dow Chemical Company, are products of this type.

2.4 TESTING

2.4.1 Chromatographic Analysis

Solvents in vinyl and epoxy paints and thinners shall be subject to analysis by programmed temperature gas chromatographic methods and/or spectrophotometric methods, employing the same techniques that 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.

2.4.2 Vinyl Paints

Vinyl paints shall be subject to the following adhesion test. When V-766 or V-106 formulations are tested, 5 to 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 to 2.5 mils as measured by ASTM D 4417, Method C. When V-102 or V-103 formulations are tested, they shall be spray applied over 1.5 to 2.5 mils (dry) of V-766 or V-106 known to pass this test. When VZ-108 is tested, the coating shall be mixed in its proper proportions and then spray applied

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to a dry film thickness of 1.5 to 2.5 mils above the blast profile. The VZ-108 shall be top coated with a V-766 known to pass this test. In all cases, the complete system shall have a total dry film thickness of 5 to 7 mils above the blast profile. After being air dried for 2 hours at room temperature, the panel shall be dried in a vertical position for 16 hours at 120 degrees F. After cooling for 1 hour, the panel shall be immersed in tap water at 85 to 90 degrees F for 48 to 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 1 inch long shall be made 1/4 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 end 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 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 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

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

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

3.1.2 Ferrous Surfaces Subject to Normal Exposure

Ferrous surfaces that are to be continuously in exterior or interior atmospheric exposure and other surfaces as directed shall be cleaned by means of power tools or by dry blasting to the brush-off grade. Cleaning

and priming shall be done in the shop unless otherwise directed or permitted. Power tool cleaning shall conform to the requirements of SSPC SP 3. Brush-off blast cleaning shall conform to the requirements of SSPC SP 7. Regardless of the overall cleaning method used, welds and adjoining surfaces within a few inches thereof shall be cleaned of weld flux, spatter, and other harmful deposits by blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete removal of each type of deposit. The combination of cleaning methods need not include blasting when preparation of the overall surfaces is carried out by the power tool method. However, brush scrubbing and rinsing with clean water, after mechanical cleaning is completed, will be required unless the latter is carried out with thoroughness to remove all soluble alkaline deposits. Wetting of the surfaces during water-washing operations shall be limited to the weld area required to be treated, and such areas shall be dry before painting. Welds and adjacent surfaces cleaned thoroughly by blasting alone will be considered adequately prepared provided that weld spatter not dislodged by the blast stream shall be removed with impact or grinding tools. All surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. To the greatest degree possible, steel surfaces shall be cleaned (and primed) prior to lengthy outdoor storage to minimize breakdown of mill scale and consequent rusting.

3.1.3 Ferrous Surfaces Subject to Severe Exposure

Ferrous surfaces subject to extended periods of immersion or as otherwise 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 SP 5 shall be done in the field and, unless otherwise specifically authorized, after final erection. Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 5 shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint. Upon written request by the Contractor, the Contracting Officer may authorize mill or shop cleaning of assembled or partially assembled components specified to receive one of the vinyl-type paint systems or Systems Nos. 6-A-Z, 21-A-Z, and 21-B-Z employing the epoxy zinc-rich primer. The surfaces, if shop blasted, shall be shop coated with the first and second coats of the specified paint system except that the epoxy zinc-rich primed surfaces shall receive an extra single spray coat of the zinc primer at the time field painting is started, as specified in the paint system instructions. The shop coating shall be maintained in good condition by cleaning and touching up of areas damaged during the construction period. If pinpoint or general rusting appears, surfaces shall be reblasted and repainted at no added cost to the Government. Prior to the field application of subsequent

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coats, soiled areas of the shop coating shall be thoroughly cleaned and all welds or other unpainted or damaged areas shall be cleaned and coated in a manner to make them equivalent to adjacent, undamaged paint surfaces.

3.2 PAINT APPLICATION

3.2.1 General

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

3.2.2 Mixing and Thinning

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

3.2.3 Atmospheric and Surface Conditions

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is

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

3.2.4 Time Between Surface Preparation and Painting

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

3.2.5 Method of Paint Application

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

3.2.6 Coverage and Film Thickness

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

3.2.6.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with 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). Frequency of measurements shall be as recommended for field measurements by ASTM D 1186 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use. Authorized thickness gages:

- a. Mikrotest, Elektro-Physik, Inc.
- b. Inspector Gage, Elcometer Instruments, Ltd.

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- c. Positest, Defelsko Corporation
- d. Minitector, Elcometer Instruments, Ltd.
- e. Positector 2000, Defelsko Corporation

3.2.6.2 Measurements on Nonferrous Metal

Where dry film thickness requirements are specified for coatings applied to nonferrous metal surfaces, measurements shall be made with one of the thickness gages listed. They shall be calibrated and used in accordance with ASTM D 1400. Calibration shall be on metal identical in composition and surface preparation to that being coated and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 1400 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use. Authorized thickness gages:

- a. Positector 3000 (aluminum and copper only)
- b. Defelsko Corporation Minitector Model 250N, 150N, or 150FN, Elcometer Instruments, Ltd.

3.2.7 Progress of Painting Work

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

3.2.8 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. Contacting

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metal surfaces formed by high-strength bolts in friction-type connections shall not be painted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.9 Drying Time Prior to Immersion

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

3.2.10 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the shop or field prior to final erection shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up without delay. The first field coat of paint shall be applied within a reasonable period of time after the shop coat and in any event before weathering of the shop coat becomes extensive.

3.2.11 Vinyl Paints

3.2.11.1 General

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 except the zinc-rich vinyl paint (Formula VZ 108d) which will normally require thinning only under certain weather conditions. Thinners for vinyl paints shall be as follows:

APPROXIMATE AMBIENT AIR TEMPERATURE
(Degrees F)

Below 50	MEK
50 - 70	MIBK
Above 70	MIAC

The amount of thinner shall be varied to provide a wet spray and avoid deposition of particles that are semidry when they strike the surface. Vinyl paints shall not be applied when the temperature of the ambient air and receiving surfaces is less than 35 degrees F nor when the receiving surfaces are higher than 125 degrees F. Each spray coat of vinyl paint 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 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.

3.2.11.2 Vinyl Zinc-Rich Primer

Primer shall be field mixed combining components A, B, and C. Mixing shall be in accordance with label instructions. After mixing, the paint shall be kept covered at all times to avoid contamination and shall be applied within 8 days after it is mixed. When the ambient and/or steel temperature is below about 80 degrees F, the paint will not normally require thinning; however, the paint shall at all times contain sufficient volatiles (thinners) to permit it to be satisfactorily atomized and to provide a wet spray and to avoid deposition of particles that are semidry when they reach the surface. The paint shall be stirred continuously during application at a rate that will prevent the zinc dust from settling. When spraying is resumed after any interruption of longer than 15 minutes, the entire length of the material hose shall be whipped vigorously until any settled zinc is redispersed. Long periods of permitting the paint to remain stagnant in the hose shall be avoided by emptying the hoses whenever the painting operation is to be suspended for more than 1 hour. The material (paint) hoses shall be kept as short as practicable, preferably not more than 50 feet in length. Equipment used for spraying this zinc primer shall not be used for spraying other vinyl-type paints without first being thoroughly cleaned, since many of the other paints will not tolerate zinc contamination; no type of hot spray shall be used. An average dry film thickness of up to 2.5 mils may be applied in one double-spray coat. Unless specifically authorized, not more than 8 days shall elapse after application of a VZ-108d zinc-rich coat before it receives a succeeding coat.

3.2.11.3 Vinyl Paints

Vinyl Paints (Formulas V-102e, V-103c, V-106d, and V-766e) are ready-mixed paints designed to be spray applied over a wide range of ambient

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temperatures by field thinning with the proper type and amount of thinner. For spray application, they shall be thinned as necessary up to approximately 25 percent (1 quart per gallon of base paint) with the appropriate thinner; when ambient and steel temperatures are above normal, up to 40-percent thinning may be necessary for satisfactory application.

3.3 PAINT SYSTEMS APPLICATION

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

3.3.1 Fabricated and Assembled Items

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

- a. Surfaces primed (only) in accordance with such standard practices are compatible with specified field-applied finish coats.
- b. Surfaces that have been primed and finish painted in accordance with the manufacturer's standard practice are of acceptable color and are capable of being satisfactorily touched up in the field.
- c. Items expressly designated herein to be cleaned and painted in a specified manner are not coated in accordance with the manufacturer's standard practice if different from that specified herein.

3.3.2 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.3 System No. 5-E-Z

Paint shall be spray applied to an average minimum dry film thickness of 7.0 mils for the completed system, and the thickness at any point shall not be less than 5.5 mils. The dry film thickness of the zinc-rich primer shall be approximately 2.5 mils. The specified film thickness shall be attained in any event, and any extra coats needed to attain the specified thickness shall be applied at no additional cost to the Government. Attaining the specified film thickness by applying 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 also 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 of nonzinc paint shall be applied at one time.

3.3.4 Protection of Nonpainted Items and Cleanup

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Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired.

3.4 PAINTING SCHEDULES

SYSTEM NO. 5-E-Z

Items or surfaces to be coated: As indicated on the drawings

SURFACE PREPARATION	1st COAT	2nd COAT	3rd COAT	4th COAT
White metal blast cleaning	Vinyl zinc- rich VZ-108d (double spray coat)	Gray Vinyl V-766e (double spray coat)	White Vinyl V-766e (double spray coat)	Gray Vinyl V-766e (double spray coat)

-- End of Section --

LABORATORY ANALYSIS REPORT

DATE: March 7, 2000 **PAGE:** 1 Of 1
CLIENT: US Army Corp Of Engineers **PROJECT NO.:** 022900-200390
190 E. 5th St. **COLLECTION DATE:** 2/28/00
St. Paul, MN 55101 **COLLECTED BY:** Client
CONTACT: Dean Skalbeck **RECEIVED DATE:** 2/29/00

<u>ANALYSIS</u>	<u>UNITS</u>	<u>PQL</u>	<u>RESULT</u>	<u>DATE</u>
Chromium (6010B)	mg/kg	12	22	3/03/00
Lead (6010B)	mg/kg	480	76,900	3/03/00

<u>ANALYSIS</u>	<u>UNITS</u>	<u>PQL</u>	<u>RESULT</u>	<u>DATE</u>
Chromium (6010B)	mg/kg	10	130	3/03/00
Lead (6010B)	mg/kg	410	51,400	3/03/00

ND means Not Detected or below reported **PQL**

PQL means Practical Quantification Limit

mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,



Gerard Herro
Laboratory Manager

GJH:wmc
coe067-1

SPECTRUM LABS

301 West County Road E2 • St. Paul, MN 55112-6859
 651. 633.0101 • FAX 651. 633.1402
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LABORATORY ANALYSIS REPORT

DATE: August 8, 2000
CLIENT: US Army Corp Of Engineers
 190 E. 5th St.
 St. Paul, MN 55101
CONTACT: John Blackstone

PAGE: 1 Of 2
PROJECT NO.: 072500-200390
COLLECTION DATE: 7/24/00
COLLECTED BY: Client
RECEIVED DATE: 7/25/00

ANALYSIS Chromium (6010B) Lead (6010B)	UNITS mg/kg mg/kg	Sample No.: 35920-1	ANALYSIS
		Sample ID.: Gate #1	
		POL	RESULT
		4.1	130
		41	100
			8/07/00
			8/07/00

ANALYSIS Chromium (6010B) Lead (6010B)	UNITS mg/kg mg/kg	Sample No.: 35920-2	ANALYSIS
		Sample ID.: Gate #2	
		POL	RESULT
		3.1	100
		31	80
			8/07/00
			8/07/00

ANALYSIS Chromium (6010B) Lead (6010B)	UNITS mg/kg mg/kg	Sample No.: 35920-3	ANALYSIS
		Sample ID.: Gate #3	
		POL	RESULT
		3.7	92
		37	140
			8/07/00
			8/07/00

ANALYSIS Chromium (6010B) Lead (6010B)	UNITS mg/kg mg/kg	Sample No.: 35920-4	ANALYSIS
		Sample ID.: Side Channel 2	
		POL	RESULT
		3.6	55
		36	7200
			8/07/00
			8/07/00

ANALYSIS Chromium (6010B) Lead (6010B)	UNITS mg/kg mg/kg	Sample No.: 35920-5	ANALYSIS
		Sample ID.: Side Channel 3	
		POL	RESULT
		4.0	ND
		40	ND
			8/07/00
			8/07/00

ND means Not Detected or below reported PQL
 PQL means Practical Quantification Limit
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

301 West County Road E2 • St. Paul, MN 55112-6859
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 www.spectrum-labs.com

DATE: August 8, 2000 **PAGE:** 2 Of 2
CLIENT: US Army Corp Of Engineers **PROJECT NO.:** 072500-200390
 190 E. 5th St. **COLLECTION DATE:** 7/24/00
 St. Paul, MN 55101 **COLLECTED BY:** Client
RECEIVED DATE: 7/25/00
CONTACT: John Blackstone

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,

[Signature]
 Gerard Herro
 Laboratory Manager

GJH:wmc
 coe35920

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RED LAKE CONTROL STRUCTURE

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DIVISION 15 - MECHANICAL

SECTION 15001

GATE INSPECTION AND REHABILITATION

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-- End of Section Table of Contents --

RED LAKE CONTROL STRUCTURE

SECTION 15001

GATE INSPECTION AND REHABILITATION

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM A 276	(1998 Rev B) Standard Specifications for Stainless Steel Bars and Shapes
ASTM B 584	(1998 Rev a Standard Specifications for Copper Alloy Sand castings for General Applications

1.2 SUBMITTALS

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

SD-04 Drawings

Shaft/Collar Assemblies; GA.

Submit shop drawings for these fabricated components as required in paragraph 3.1.3.1.

SD-09 Reports

Gate Inspection Report; FIO.

Submit a Gate inspection report as detailed in paragraph 3.3.

1.3 MEASUREMENT AND PAYMENT

The work of this section will not be measured for separate payment and payment will be made on a lump sum basis.

PART 2 PRODUCTS

2.1 MATERIALS

RED LAKE CONTROL STRUCTURE

The components shall be manufactured from the following materials.

2.1.1 Shaft

ASTM A276, UNS S30300 or UNS S30400, stainless steel, quantity = 12.

2.1.2 Roller Bushings

ASTM B 584, alloy C93200, quantity = 12 + 4 spares = 16.

2.1.3 Shaft Collars

Shaft collars shall be as manufactured by Boston, #2SSC243 stainless Steel, or approved equal, quantity = 24 + 2 spares = 26.

2.1.4 J-Bulb Seals

The J-bulb 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. The material shall have the following physical properties

<u>Physical Test</u>	<u>Test Value</u>	<u>Test Method Specifications</u>
Tensile Strength	3000 psi (min.)	ASTM D412
Elongation at break	450% (min.)	ASTM D412
300% Modulus	900 psi (min.)	ASTM D412
Durometer Hardness		
Shore Type A	60 to 70	ASTM D676
Water Absorption	5% by weight (max.)	ASTM D471
Compression Set	30% (max.)	ASTM D395
Tensile Strength after		
Oxygen Bomb Aging	80% (min.) of tensile Strength	ASTM D572

PART 3 EXECUTION

3.1 Stoplog Installation

Upon completion of the required painting and gate rehabilitation, the Contractor shall install Government provided stoplogs in the stoplog grooves for each gate. The stoplogs shall be installed while the grooves are in the dewatered condition. The Contractor shall notify the Contracting Officer 7 days in advance of the time required for the stoplogs to be delivered for installation. The stoplogs shall be installed as directed by the Contracting Officer.

3.2 ROLLER REHABILITATION

Reference drawings for this work are R13-P-40/3 and R13-P-50/1. This section defines the contractor's work to refurbish the rollers.

3.2.1 Components

RED LAKE CONTROL STRUCTURE

The contractor shall refurbish and reuse the following components.

Rollers Mark 50/1-7 Quantity = 12

The Contractor shall replace the following components with new fabricated/purchased items.

Shaft	Mark 50/1-6	Quantity = 12
Roller Bushings	Mark 50/1-9	Quantity = 12 + 4 spares
Setscrew Collar Ass'y (50/1-E,F)		Quantity = 12 + 2 Spares

The Contractor shall furnish the following new purchased items.

Shaft Collar Boston # 2SSC243 Quantity = 24 + 2 spares

3.2.2 Procedure by Removing the Gates

The original design does not include a method to replace these parts without completely removing the 3000 pound vertical lift gates from the slots. Removal of the gates from the slots requires that the gate lift operators and upper decking be removed from above the slots. Use a crane to hoist the gates up clear from the slots. Disassemble the shafts and rollers from the gate and remove the shafts out the sides of the gates.

3.2.3 Procedure Without Removing the Gates

The following describes viable alternatives to removing the gate to access the roller assemblies, at the expense of having to replace the shafts Mk 50/1-6. Refer to Section B-B on R13-P-50/1, which shows that with the gate in the slots, it may be feasible to hacksaw or sawzall through the shaft by fitting the hacksaw blade between the side of the gate and the setscrew collar (Mk 50/1-E,F). Additional clearance to the sawblade can be obtained if the J-bulb seals are removed from the upstream side of the gate adjacent to the roller shaft to be cut. It also appears that the shafts could be carefully flame cut as close as practical to the gate frame, and the outboard roller/shaft remnants could be simply punched out and then fished out of the bulkhead slots from above.

3.2.4 Fabrication

Fabricate new shafts to the same dimensions and tolerances as shown on the reference drawing for Mk 50/1-6, with the following changes

- 1) Increase the length of the shaft at the bushing interface from 2-9/16-inches to 3-inches long.
- 2) Delete the 4-inch diameter x 1/4-inch thick "head" that is used at the outboard end of the existing shaft.
- 3) Chamfer full circumference at the new outboard shaft end 30 degrees x 1/4-inch long.

RED LAKE CONTROL STRUCTURE

4) Delete 2 1/2" diameter threads and the two hexnuts per shaft. Incorporate collar assemblies to axially lock position of shaft to gate framing. Collars (2 per shaft) similar to Boston # 2SSC243 with two shaft recesses 2 7/16" diameter to accept collar ID>

These shaft detail changes will allow future roller removal or maintenance without removing the gate from the slots. The item (1) shaft length increase is to allow the installed roller to float axially without coming off of the shaft. The item (3) tapered/chamfered end facilitates installing the shaft into the roller after the gate is installed in the slots.

3.2.5 Installation

Press out and discard the existing "Lubrite" bushings from the rollers. Fabricate new bushings cut to the same dimensions and tolerances as the existing bushings shown on the reference drawings for Mk 50/1-9. Press the new bushings into the existing rollers. Assemble the gate roller assemblies. Reinstall the gates into the slots if the gates were removed. Resynchronize the lift stems so that the gates hang level from the lift stems to within (+/-) 0.25 inch tolerance at any position of gate raise.

3.3 J-BULB SEAL REPLACEMENT

Remove the existing J-bulb seals and replace with new J-bulb seals

3.4 GATE INSPECTION

The latest Government Periodic Inspection report indicates that the vertical lift gates at Red Lake Dam bays 1 and 2 will not fully close. This section defines contractor procedures with the intent to quantitatively determine the cause for the gates not closing and to propose remedies. The contractor shall perform the following specified operations, and make specified measurements and inspections. The contractor shall supply all equipment required to perform specified work. For each procedure, include a scale sketch of where measurements were taken and description of methods and equipment used. After completion of this section, the contractor shall submit work documentation to the Government. Reference drawings for this work are R13-P-40/3 and R13-P-50/1.

3.4.1 Range of Motion Gate Measurements

Test operate each the three vertical lift gates to determine existing condition maximum range of motion up/down. Each gate has two mechanically-linked lift stems and these lift stems may have become unsynchronized for some reason. Use the handcrank and no more than about 100 foot-pound input torque to raise and lower each of the gates to the extent possible. With the gates as far up and as far down as they will go, take two measurements per gate, one measurement at the north end, and one equivalent measurement at the south end, to determine gate vertical skew or plumb.

3.4.1.1 Measurements

RED LAKE CONTROL STRUCTURE

Take all measurements as the vertical distance (to nearest (+/-)0.1 inch) from top surface of slide gate to the top of the operator deck. Note from R13-P-40/3 that the datum theoretical top of gate is very near elevation 1174.6 for gate full down position. Note from R13-P-40/3 that the elevation at the datum operator deck is elevation 1181.39. Floor grating under the vertical gate operators may have to be temporarily removed for access to these measurements. Complete TABLE A in the presence of the Government's inspector.

TABLE A: MEASURED DISTANCES FROM TOP SURFACE OF SLIDE GATE TO OPERATOR DECK ELEVATION 1181.39

	GATE UP existing condition	GATE DOWN existing condition
BAY 1 NORTH END:	_____	_____
BAY 1 SOUTH END:	_____	_____
BAY 1 SKEW (north to south):	_____	_____
BAY 2 NORTH END:	_____	_____
BAY 2 SOUTH END:	_____	_____
BAY 2 SKEW (north to south):	_____	_____
BAY 3 NORTH END:	_____	_____
BAY 3 SOUTH END:	_____	_____
BAY 3 SKEW (north to south):	_____	_____

3.4.2 Gate Range of Motion Lift Stem Measurements

The existing operators for the vertical lift gates are shown on R13-P-40/3 as Hardesty Type 2 with 2.5-inch diameter rising stems. Take and record measurements to investigate gate range of travel and possible gate skew from up at gate lift stems as follows. Remove gate lift stem covers to expose the gate lift stems. Measure distance top of stem to operator deck elevation 1181.39 at the existing extremes of gate travel up/down. Use of stepladder, carpenter's level and tape measure will be required to take

RED LAKE CONTROL STRUCTURE

these measurements, and measurements are to be made to the nearest (+/-)0.1 inch. Measurements to complete TABLE B shall be taken by the contractor in the presence of the Government's inspector.

3.4.2.1 Inspection

When the gates are raised, inspect and document the condition of the gate rollers as specified later in this section.

TABLE B: MEASURED DISTANCES TOP SURFACE OF GATE STEM TO OPERATOR DECK ELEVATION EL.1181.39

	GATE UP existing condition	GATE DOWN existing condition
BAY 1 NORTH END:	_____	_____
BAY 1 SOUTH END:	_____	_____
BAY 1 SKEW (north to south):	_____	_____
BAY 2 NORTH END:	_____	_____
BAY 2 SOUTH END:	_____	_____
BAY 2 SKEW (north to south):	_____	_____
BAY 3 NORTH END:	_____	_____
BAY 3 SOUTH END:	_____	_____
BAY 3 SKEW (north to south):	_____	_____

3.4.3 Gate Lift and Operator Internal Wear Inspection

Gate lift operators are manufactured by Armco and installed in about 1953. Drawings of the gate lift operators are not available. For illustration purposes, a cutaway view of a typical gate operator stand is attached. The expected main wear item for these gate lifts is the bronze stem nut, which is contained within the gate lift outer casting. Internal gearing also is a typical failure item for gate operators. Perform this inspection with the gate as far down as it will go so as to unload the lift stem and the operator gearing. Unbolt and remove the top cover casting of both gate operators on each gate to expose the gate stem nuts. Use a chain wrap

RED LAKE CONTROL STRUCTURE

wrench or other leverage device as approved, to manually turn the synchronization shaft back and forth. Observe and document any wear at the gearing or stem interfaces within the operator stands. Document the grease condition, including any unique sediment or entrained metallic particles in the grease. The stem nut inside diameter engages the lift stem and the stem nut outside diameter contains the primary reduction worm gear. Examine/document the stem nut condition to include cracked/missing teeth on the OD and pulled out stem threads on the ID. Examine the condition of the worm pinion that engages the stem nut outside diameter to include cracked/missing teeth or that the teeth are excessively worn down that slippage could occur between the worm pinion and worm gear. Complete TABLE C in the presence of the Government's inspector to document the results of this inspection.

3.4.3.1 Lubrication

At the end of this procedure, clean out the existing lubricants as can be seen with the top cover casting removed. Reinstall the top cover casting and apply new Government-furnished multipurpose grease as approved.

TABLE C: OPERATOR INTERNAL INSPECTION

BAY 1 - NORTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION: _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

BAY 1 - SOUTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

BAY 2 - NORTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION: _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

RED LAKE CONTROL STRUCTURE

TABLE C: OPERATOR INTERNAL INSPECTION

BAY 2 - SOUTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION: _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

BAY 3 - NORTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION: _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

BAY 3 - SOUTH END OPERATOR:

GREASE CONDITION: _____

STEM NUT CONDITION: _____

WORM GEAR CONDITION: _____

CONDITION OF SEALS/BEARINGS: _____

3.4.4 Gate Stem Inspection

This inspection is to quantify any gross buckling or warping in the gate stems. This inspection is performed with the gates as far down as they will go. Position a 5-foot long carpenter's level (or other straightedge as approved) vertically against the portion of the gate stem between the gate and the operator. Measure any stem bowing by using feeler gages or compass spanner positioned at the gap (if any) between the stem and the centerline of the straightedge. Perform this measurement four equal spaced positions radially around each stem (i.e. at 0, 90, 180, and 270 degrees). Take measurements to the nearest (+/-)0.1-inch and complete TABLE D in the presence of the Government's inspector.

TABLE D: GATE STEM BUCKLING MEASUREMENTS (AIR GAP BTWN STEM AND STRAIGHTEDGE):

BAY 1 - NORTH END STEM:
GAP at 0 degrees _____

BAY 1 - SOUTH END STEM:
GAP at 0 degrees _____

RED LAKE CONTROL STRUCTURE

TABLE D: GATE STEM BUCKLING MEASUREMENTS (AIR GAP BTWN STEM AND STRAIGHTEDGE):

GAP at 90 degrees _____ GAP at 90 degrees _____
 GAP at 180 degrees _____ GAP at 180 degrees _____
 GAP at 270 degrees _____ GAP at 270 degrees _____

BAY 2 - NORTH END STEM:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

BAY 2 - SOUTH END STEM:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

BAY 3 - NORTH END STEM:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

BAY 3 - SOUTH END STEM:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

3.4.5 Synchronization Shaft Inspection

This inspection is to quantify any gross buckling or warping in each gate's synchronization shaft. Reports are on file that these synchronization shafts are noticeably bent, probably caused by vandals hanging on them. This inspection is performed with the gates at any elevation. Position a straightedge as approved) horizontally against the portion of the gate stem between the gate and the operator. Measure any stem bowing by using feeler gages or compass spanner positioned at the gap (if any) between the stem and the centerline of the straightedge. Perform this measurement four equal spaced positions radially around each stem (i.e. at 0, 90, 180, and 270 degrees). Take measurements to the nearest (+/-)0.1-inch and complete TABLE E in the presence of the Government's inspector.

TABLE E: SYNCHRONIZATION SHAFT BUCKLING MEASUREMENTS (AIR GAP BTWN SYNCHRONIZATION SHAFT AND STRAIGHTEDGE)

BAY 1 - SYNCHRONIZATION SHAFT:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

BAY 2 - SYNCHRONIZATION SHAFT:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

BAY 3 - SYNCHRONIZATION SHAFT:

GAP at 0 degrees _____
 GAP at 90 degrees _____
 GAP at 180 degrees _____
 GAP at 270 degrees _____

RED LAKE CONTROL STRUCTURE

TABLE E: SYNCHRONIZATION SHAFT BUCKLING MEASUREMENTS (AIR GAP BTWN SYNCHRONIZATION SHAFT AND STRAIGHTEDGE)

3.4.6 Synchronization Shaft Coupling Inspection

This work item is to quantify the extent that the gate lift's synchronization shaft couplings may be worn or damaged. Lower the gate as far down as it goes so as to unload the synchronization shaft to the extent possible. Rotate the synchronization shaft in both directions by the handcrank or other means as approved , to reverse-load the couplings. Meanwhile, inspect the synchronization shaft couplings for any obvious loose parts or damage. Document these observations in TABLE F in the presence of the Government's inspector.

TABLE F: SYNCHRONIZATION SHAFT COUPLING OBSERVATIONS

BAY 1 - NORTH END COUPLING CONDITION _____

BAY 1 - SOUTH END COUPLING CONDITION _____

BAY 2 - NORTH END COUPLING CONDITION _____

BAY 2 - SOUTH END COUPLING CONDITION _____

BAY 3 - NORTH END COUPLING CONDITION _____

BAY 3 - SOUTH END COUPLING CONDITION _____

3.4.7 Gate Lift Operator Spur Gear Inspection

This work/inspection item is performed with the gate full down position and with the gate lifts unloaded. This procedure allows inspection of the Armco gate lift's spur gear reductions attached to the synchronization shaft couplings. Remove the synchronization shaft couplings and synchronization shaft. Remove the spur gear cover casting. Inspect for broken teeth on the pinion/gear set, loose bearings, and bad seals, and document inspection results in TABLE G. Perform this inspection work in the presence of the Government's inspector.

3.4.7.1 Lubrication

At the end of this procedure, clean out the existing lubricants as can be

RED LAKE CONTROL STRUCTURE

seen with the top cover casting removed. Reinstall the top cover casting and apply new Government-furnished multipurpose grease as approved.

TABLE G: GATE LIFT SPUR GEARING OBSERVATIONS

BAY 1 - NORTH END SPUR GEARING CONDITION _____

BAY 1 - SOUTH END SPUR GEARING CONDITION _____

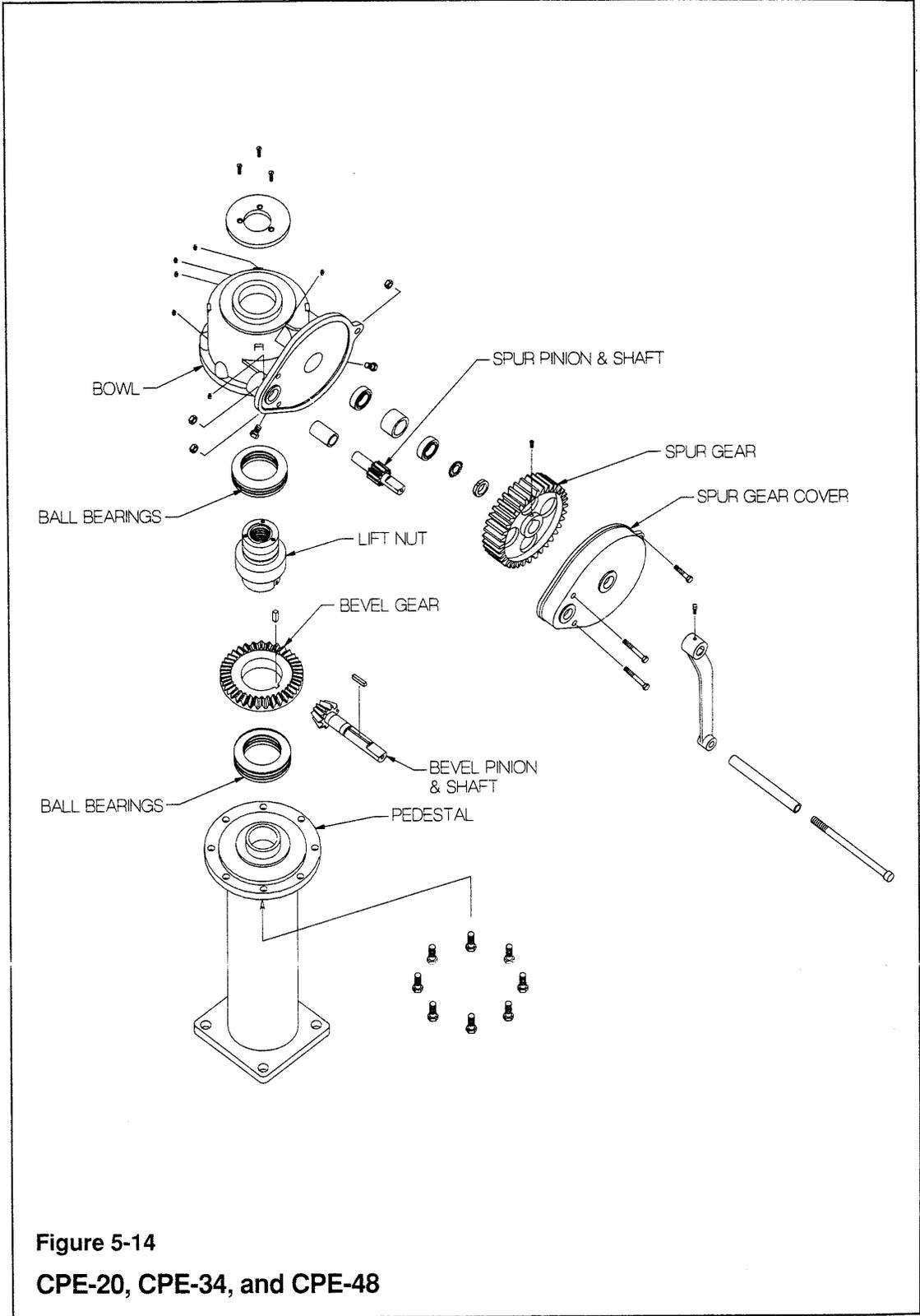
BAY 2 - NORTH END SPUR GEARING CONDITION _____

BAY 2 - SOUTH END SPUR GEARING CONDITION _____

BAY 3 - NORTH END SPUR GEARING CONDITION _____

BAY 3 - SOUTH END SPUR GEARING CONDITION _____

-- End of Section --



TYPICAL ARMCO GATE LIFT COMPONENTS

RED LAKE CONTROL STRUCTURE

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DIVISION 16 - ELECTRICAL

SECTION 16121

ELECTRICAL

PART 1 GENERAL

1.1 SCOPE

1.2 MEASUREMENT AND PAYMENT

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION NOT USED

-- End of Section Table of Contents --

RED LAKE CONTROL STRUCTURE

SECTION 16121

ELECTRICAL

PART 1 GENERAL

1.1 SCOPE

The requirements for the electrical work are defined on the drawings.

1.2 MEASUREMENT AND PAYMENT

The work associated with the electrical requirements will not be measured for separate payment and will be paid for on a lump sum basis complete.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION NOT USED

-- End of Section --