

US Army Corps
of Engineers®
St. Louis District

MONARCH - CHESTERFIELD LEVEE DISTRICT FLOOD PROTECTION PROJECT

WATERSHED 5 RELIEF WELLS

MISSOURI RIVER BASIN
CHESTERFIELD, MISSOURI

CONSTRUCTION SOLICITATION
AND SPECIFICATIONS

SOLICITATION NUMBER: W912P9-13-R-0720

JULY 2013

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xxx

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	W912P9-13-R-0720	<input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	17-Jul-2013	1 OF 171

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

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.
7. ISSUED BY CONTRACTING DIVISION USARMY ENGR DIST ST LOUIS 1222 SPRUCE ST RM 4.207 ST LOUIS MO 63103-2833 TEL: 314-331-8500 FAX: 314-331-8746	CODE W912P9 See Item 7	8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE TEL: FAX:
9. FOR INFORMATION CALL:	A. NAME KATHLEEN M SOUDERS	B. TELEPHONE NO. <i>(Include area code) (NO COLLECT CALLS)</i> 314 331-8502

SOLICITATION

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

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

PROJECT: MCLD Watershed 5 Relief Wells

Project Scope: This requirements consists of construction of relief wells. collector system and discharge pipes and includes removals; care of water; clearing, grubbing and stripping; establishment of turf; relief well drilling, installation and testing; concrete; crushed stone and 140 lb. riprap; RCP pipe and manholes. All work to be performed in accordance with this solicitation's plans and specifications.

EPA designated items are specified in the technical provisions of this project.

Project Magnitude is between \$1,000,000.00 and \$5,000,000.00.

This procurement is an 8(a) sole source set-aside.

Proposal is due by 11:00 A.M. Local Time on 2 August 2013.

11. The Contractor shall begin performance within 10 calendar days and complete it within 270 calendar days after receiving award, notice to proceed. This performance period is mandatory, negotiable. *(See 52.211-10 _____.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS?
(If "YES," indicate within how many calendar days after award in Item 12B.)

YES NO

12B. CALENDAR DAYS

10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 1 copies to perform the work required are due at the place specified in Item 8 by 11:00 AM (hour) local time 16 Aug 2013 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee is, is not required.

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

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

SOLICITATION, OFFER, AND AWARD (Continued)*(Construction, Alteration, or Repair)***OFFER (Must be fully completed by offeror)**14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*15. TELEPHONE NO. *(Include area code)*16. REMITTANCE ADDRESS *(Include only if different than Item 14)***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 each)*

AMENDMENT NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN
*(4 copies unless otherwise specified)***ITEM**

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

 10 U.S.C. 2304(c) 41 U.S.C. 253(c)

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE BY:

CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract. 29. AWARD *(Contractor is not required to sign this document.)*

Your offer on this solicitation, is hereby accepted as to the items listed. This award commutes the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*31A. NAME OF CONTRACTING OFFICER *(Type or print)*

30B. SIGNATURE

30C. DATE

TEL:

EMAIL:

31B. UNITED STATES OF AMERICA
BY

31C. AWARD DATE

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	Watershed #5 Relief Wells FFP FOB: Destination	1	Lump Sum		

NET AMT

BIDDING SCHEDULE NOTES

1. All quantities shown on the BIDDING SCHEDULE are estimated quantities except when the unit is shown as lump sum "LS".
2. When bids are solicited on a unit price basis, bidders shall insert in the spaces provided therefore in the BIDDING SCHEDULE both the "unit price" and the "estimated amount resulting from applying the said unit price to the estimated quantity shown. In event the bidder quotes only a total price ("estimated amount") in its bid and fails to quote the unit price, the Government will determine such unit price by dividing the total price quoted by the quantity of the item set out in the BIDDING SCHEDULE. The bidder agrees that the unit price so determined shall be used for the purpose of bid evaluation, award and all payments to the Contractor including final payment.
3. All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and the extension, the unit price will be considered to be the bid and the extension will be corrected accordingly.
4. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.
5. Bidders are required to bid on all items listed on the BIDDING SCHEDULE in addition to inserting a total quoted bid in the appropriate space provided. Failure to do so will be considered good cause to disqualify the bid.
6. Bidders are encouraged to pay particular attention to the requirements on lab "validation" in Section 01 14 40 of the contract specifications.

7. EVALUATION OF SUBDIVIDED ITEMS

Item Nos. 0021 thru 0023 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.

8. VARIATION IN ESTIMATED QUANTITIES – SUBDIVIDED ITEMS.

(a) Variation from the estimated quantity in the actual work performed under any second or subsequent subitem will not be the basis for an adjustment in contract unit price.

(b) Where the actual quantity of work performed for Item Nos. 0021 thru 0023 is less than 85 percent of the quantity of the first subitem listed under such item, the Contractor will be paid at the contract unit price for that subitem for the actual quantity of work performed, and, in addition,, an equitable adjustment shall be made in accordance with Contract Clause FAR 52.211-18 Variation in Estimated Quantities.

(c) If the actual quantity of work performed under Item Nos. 0021 thru 0023 exceeds 115 percent or is less than 85 percent of the total work performed under the second subitem or any subsequent subitem under Item Nos. 0021 thru 0023 exceeds 115 percent or is less than 85 percent of the estimated quantity of any such subitem, 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 Contract Clause FAR 52.211-18 Variation in Estimated Quantities.

BIDDING SCHEDULE

CLIN NO.	DESCRIPTION	ESTIMATED QUANTITY	UOM	UNIT PRICE	ESTIMATED AMOUNT
0001	Mobilization and Demobilization	1	LS		
0002	Removals	1	LS		
0003	Stripping	1	LS		
0004	Establishment of Turf	1	LS		
0005	30" RCP Discharge Pipe	43	LF		
0006	24" RCP Discharge Pipe	1185	LF		
0007	24" RCP Collector System Pipe	1093	LF		
0008	12" RCP Collector System Pipe	42	LF		
0009	Discharge Manhole	6	EA		
0010	Collector System Manhole	6	EA		
0011	Relief Well Manhole	6	EA		
0012	Well Screen	200	LF		
0013	Well Screen	25	LF		
0014	Riser Pipe and Blank Pipe	180	LF		
0015	Well Drilling	451	LF		
0016	Well Installation	442	LF		
0017	Well Abandonment 0 - 20 Ft Depth	20	LF		

0018	Well Abandonment 21-100 Ft Depth	80	LF		
0019	Well Development	12	HR		
0020	Pumping Tests	12	HR		
0021	Crushed Stone Road Repair				
0021AA	First 10 tons	10	TN		
0021AB	All over 10 tons	10	TN		
0022	140 lb. Riprap				
0022AA	First 225 tons	225	TN		
0022AB	All over 225 tons	200	TN		
0023	Bedding Material				
0023AA	First 100 tons	100	TN		
0023AB	All over 100 tons	90	TN		
0024	Bonding	1	LS		
	GRAND TOTAL				

Section 00100 - Bidding Schedule/Instructions to Bidders

LOCAL CLAUSES**252.204-7004 CENTRAL CONTRACTOR REGISTRATION (FAR 52.204-7 – DEC 2012)
ALTERNATE A (MAY 2013)**

- (a) *Definitions.* As used in this clause--
- “System for Award Management (SAM) database” means the primary Government repository for contractor information required for the conduct of business with the Government.
- “Commercial and Government Entity (CAGE) code” means—
- (1) A code assigned by the Defense Logistics Information Service (DLIS) to identify a commercial or Government entity; or
 - (2) A code assigned by a member of the North Atlantic Treaty Organization that DLIS records and maintains in the CAGE master file. This type of code is known as an “NCAGE code.”
- “Data Universal Numbering System (DUNS) number” means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.
- “Data Universal Numbering System +4 (DUNS+4) number” means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional SAM records for identifying alternative Electronic Funds Transfer (EFT) accounts (see FAR 32.11) for the same parent concern.
- “Registered in the System for Award Management (SAM) database” means that—
- (1) The contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, and Contractor and Government Entity (CAGE) code into the SAM database; and
 - (2) The contractor has completed the Core Data, Assertions, Representations and Certifications, and Points of Contact sections of the registration in the SAM database;
 - (3) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS). The Contractor will be required to provide consent for TIN validation to the Government as part of the SAM registration process; and
 - (4) The Government has marked the record “Active.”

(b)

- (1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.
- (2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “DUNS” or “DUNS+4” followed by the DUNS or DUNS+4 number that identifies the offeror’s name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number—

(i) Via the internet at <http://fedgov.dnb.com/webform> or if the offeror does not have internet access, it may call Dun and Bradstreet at 1-866-705-5711 if located within the United States; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office. The offeror should indicate that it is an offeror for a U.S. Government contract when contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business name.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company physical street address, city, state and Zip Code.

(iv) Company mailing address, city, state and Zip Code (if separate from physical).

(v) Company telephone number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) Offerors may obtain information on registration at <https://www.acquisition.gov> .

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52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm Fixed Price contract resulting from this solicitation.

(End of provision)

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52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Contracting Officer
St. Louis District, U S Army Corps of Engineers
1222 Spruce St., Room 4.207
St. Louis, MO 63103-2833

(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)

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52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals 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 proposal must initial each erasure or change appearing on any proposal form.

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

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

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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://farsite.hill.af.mil>

(End of provision)

Section 00600 - Representations & Certifications

LOCAL CLAUSES**252.204-7007 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (FAR 52.204-8 – DEC 2012)
ALTERNATE (MAY 2013)**

- (a) (1) The North American Industry classification System (NAICS) code for this acquisition is 237110.
- (2) The small business size standard is \$33.5M.
- (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)
- (1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (d) of this provision applies.
- (2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certification in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:
- (i) Paragraph (d) applies.
- (ii) Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.
- (c) (1) The following representations or certifications in ORCA are applicable to this solicitation as indicated:
- (i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—
- (A) The acquisition is to be made under the simplified acquisition procedures in Part 13;
- (B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or
- (C) The solicitation is for utility services for which rates are set by law or regulation.
- (ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.
- (iii) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the clause at 52.204-7, Central Contractor Registration.
- (iv) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—

(A) Are not set aside for small business concerns;

(B) Exceed the simplified acquisition threshold; and

(C) Are for contracts that will be performed in the United States or its outlying areas.

(v) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations—Representation. This provision applies to solicitations using funds appropriated in fiscal years 2008, 2009, 2010, or 2012.

(vi) 52.209-5; Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(vii) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(viii) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(ix) 52.219-1, Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.

(A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.

(B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

(x) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.

(xi) 52.222-22, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at 52.222-26, Equal Opportunity.

(xii) 52.222-25, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at 52.222-26, Equal Opportunity.

(xiii) 52.222-38, Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial items.

(xiv) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.

(xv) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA-designated items.

(xvi) 52.225-2, Buy American Act Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xvii) 52.225-4, Buy American Act--Free Trade Agreements--Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at 52.225- 3.

(A) If the acquisition value is less than \$25,000, the basic provision applies.

(B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.

(C) If the acquisition value is \$50,000 or more but is less than \$77,494, the provision with its Alternate II applies.

(D) If the acquisition value is \$77,494 or more but is less than \$100,000, the provision with its Alternate III applies.

(xviii) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xix) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan-- Certification. This provision applies to all solicitations.

(xx) 52.225-25, Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certification. This provision applies to all solicitations.

(xxi) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to—

(A) Solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions; and

(B) For DoD, NASA, and Coast Guard acquisitions, solicitations that contain the clause at 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns.

(2) The following certifications are applicable as indicated by the Contracting Officer:

[Contracting Officer check as appropriate.]

___ (i) 52.219-22, Small Disadvantaged Business Status.

___ (A) Basic.

___ (B) Alternate I.

___ (ii) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.

___ (iii) 52.222-48, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment Certification.

___ (iv) 52.222-52 Exemption from Application of the Service Contract Act to Contracts for Certain Services--Certification.

___ (v) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).

___ (vi) 52.227-6, Royalty Information.

___ (A) Basic.

___ (B) Alternate I.

___ (vii) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d)(1) The following representations or certifications in the System for Award Management (SAM) database are applicable to this solicitation as indicated:

- (i) [252.209-7001](#), Disclosure of Ownership or Control by the Government of a Terrorist Country. Applies to all solicitations expected to result in contracts of \$150,000 or more.
- (ii) [252.209-7003](#), Reserve Officer Training Corps and Military Recruiting on Campus—Representation. Applies to all solicitations with institutions of higher education.
- (iii) [252.216-7008](#), Economic Price Adjustment—Wage Rates or Material Prices Controlled by a Foreign Government. Applies to solicitations for fixed-price supply and service contracts when the contract is to be performed wholly or in part in a foreign country, and a foreign government controls wage rates or material prices and may during contract performance impose a mandatory change in wages or prices of materials.
- (iv) [252.225-7042](#), Authorization to Perform. Applies to all solicitations when performance will be wholly or in part in a foreign country.
- (v) [252.229-7012](#), Tax Exemptions (Italy)—Representation. Applies to solicitations and contracts when contract performance will be in Italy.
- (vi) [252.229-7013](#), Tax Exemptions (Spain)—Representation. Applies to solicitations and contracts when contract performance will be in Spain.
- (vii) [252.247-7022](#), Representation of Extent of Transportation by Sea. Applies to all solicitations except those for direct purchase of ocean transportation services or those with an anticipated value at or below the simplified acquisition threshold.

(2) The following representations or certifications in SAM are applicable to this solicitation as indicated by the Contracting Officer: [*Contracting Officer check as appropriate.*]

___ (i) [252.209-7002](#), Disclosure of Ownership or Control by a Foreign Government.

___ (ii) [252.225-7000](#), Buy American—Balance of Payments

Program Certificate.

- ___ (iii) [252.225-7020](#), Trade Agreements Certificate.
 - ___ Use with Alternate I.
- ___ (iv) [252.225-7022](#), Trade Agreements Certificate—Inclusion of Iraqi End Products.
- ___ (v) [252.225-7031](#), Secondary Arab Boycott of Israel.
- ___ (vi) [252.225-7035](#), Buy American—Free Trade

Agreements—Balance of Payments Program Certificate.

- ___ Use with Alternate I.
- ___ Use with Alternate II.
- ___ Use with Alternate III.
- ___ Use with Alternate IV.
- ___ Use with Alternate V.

(e) The offeror has completed the annual representations and certifications electronically via the SAM website at <https://www.acquisition.gov/>. After reviewing the SAM database information, the offeror verifies by submission of the offer that

the representations and certifications currently posted electronically that apply to this solicitation as indicated in FAR 52.204-8(c) and paragraph (d) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer, and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [*offeror to insert changes, identifying change by provision number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR/DFARS Provision #	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications located in the SAM database.

(End of provision)

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52.209-7 INFORMATION REGARDING RESPONSIBILITY MATTERS (FEB 2012)

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

Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative Proceedings, Civilian Board of Contract Appeals Proceedings, and Armed Services Board of Contract Appeals Proceedings). This includes administrative proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include agency actions such as contract audits, site visits, corrective plans, or inspection of deliverables.

Federal contracts and grants with total value greater than \$10,000,000 means--

- (1) The total value of all current, active contracts and grants, including all priced options; and
- (2) The total value of all current, active orders including all priced options under indefinite-delivery, indefinite-quantity, 8(a), or requirements contracts (including task and delivery and multiple-award Schedules).

Principal means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).

(b) The offeror () has () does not have current active Federal contracts and grants with total value greater than \$10,000,000.

(c) If the offeror checked “has” in paragraph (b) of this provision, the offeror represents, by submission of this offer, that the information it has entered in the Federal Awardee Performance and Integrity Information System (FAPIS) is current, accurate, and complete as of the date of submission of this offer with regard to the following information:

(1) Whether the offeror, and/or any of its principals, has or has not, within the last five years, in connection with the award to or performance by the offeror of a Federal contract or grant, been the subject of a proceeding, at the Federal or State level that resulted in any of the following dispositions:

(i) In a criminal proceeding, a conviction.

(ii) In a civil proceeding, a finding of fault and liability that results in the payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more.

(iii) In an administrative proceeding, a finding of fault and liability that results in--

(A) The payment of a monetary fine or penalty of \$5,000 or more; or

(B) The payment of a reimbursement, restitution, or damages in excess of \$100,000.

(iv) In a criminal, civil, or administrative proceeding, a disposition of the matter by consent or compromise with an acknowledgment of fault by the Contractor if the proceeding could have led to any of the outcomes specified in paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this provision.

(2) If the offeror has been involved in the last five years in any of the occurrences listed in (c)(1) of this provision, whether the offeror has provided the requested information with regard to each occurrence.

(d) The offeror shall post the information in paragraphs (c)(1)(i) through (c)(1)(iv) of this provision in FAPIS as required through maintaining an active registration in the Central Contractor Registration database via <https://www.acquisition.gov> (see 52.204-7).

(End of provision)

CLAUSES INCORPORATED BY FULL TEXT

52.215-22 LIMITATIONS ON PASS-THROUGH CHARGES--IDENTIFICATION OF SUBCONTRACT EFFORT (OCT 2009)

(a) Definitions. Added value, excessive pass-through charge, subcontract, and subcontractor, as used in this provision, are defined in the clause of this solicitation entitled "Limitations on Pass-Through Charges" (FAR 52.215-23).

(b) General. The offeror's proposal shall exclude excessive pass-through charges.

(c) Performance of work by the Contractor or a subcontractor. (1) The offeror shall identify in its proposal the total cost of the work to be performed by the offeror, and the total cost of the work to be performed by each subcontractor, under the contract, task order, or delivery order.

(2) If the offeror intends to subcontract more than 70 percent of the total cost of work to be performed under the contract, task order, or delivery order, the offeror shall identify in its proposal--

(i) The amount of the offeror's indirect costs and profit/fee applicable to the work to be performed by the subcontractor(s); and

(ii) A description of the added value provided by the offeror as related to the work to be performed by the subcontractor(s).

(3) If any subcontractor proposed under the contract, task order, or delivery order intends to subcontract to a lower-tier subcontractor more than 70 percent of the total cost of work to be performed under its subcontract, the offeror shall identify in its proposal--

(i) The amount of the subcontractor's indirect costs and profit/fee applicable to the work to be performed by the lower-tier subcontractor(s); and

(ii) A description of the added value provided by the subcontractor as related to the work to be performed by the lower-tier subcontractor(s).

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals 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 proposal must initial each erasure or change appearing on any proposal form.

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

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

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)

CLAUSES INCORPORATED BY FULL TEXT

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)

CLAUSES INCORPORATED BY FULL TEXT

52.203-7 ANTI-KICKBACK PROCEDURES. (OCT 2010)

(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 \$150,000.

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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 (OCT 2010)

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

Agency means executive agency as defined in Federal Acquisition Regulation (FAR) 2.101.

Covered Federal action means any of the following actions:

- (1) Awarding any Federal contract.
- (2) Making any Federal grant.
- (3) Making any Federal loan.
- (4) Entering into any cooperative agreement.
- (5) Extending, continuing, renewing, amending, or modifying any Federal contract, grant, loan, or cooperative agreement.

Indian tribe and tribal organization 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 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 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 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 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 eligible to receive Federal contracts, grants, cooperative agreements, or loans from an agency, but only with respect to expenditures by such tribe or organization that are made for purposes specified in paragraph (b) of this clause and are permitted by other Federal law.

Reasonable compensation 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 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 includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization eligible to receive Federal contracts, grants, cooperative agreements, or loans from an agency, but only with respect to expenditures by such tribe or organization that are made for purposes specified in paragraph (b) of this clause and are permitted by other Federal law.

Regularly employed 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 means a State of the United States, the District of Columbia, or an outlying area of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibition. 31 U.S.C. 1352 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 covered Federal actions. In accordance with 31 U.S.C. 1352, the Contractor shall not use 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 the award of this contractor the extension, continuation, renewal, amendment, or modification of this contract.

(1) The term appropriated funds does not include profit or fee from a covered Federal action.

(2) To the extent the Contractor can demonstrate that the Contractor has sufficient monies, other than Federal appropriated funds, the Government will assume that these other monies were spent for any influencing activities that would be unallowable if paid for with Federal appropriated funds.

(c) Exceptions. The prohibition in paragraph (b) of this clause does not apply under the following conditions:

(1) Agency and legislative liaison by Contractor employees.

(i) Payment of reasonable compensation made to an officer or employee of the Contractor if the payment is for agency and legislative liaison activities not directly related to this contract. For purposes of this paragraph, providing any information specifically requested by an agency or Congress is permitted at any time.

(ii) Participating with an agency in discussions that are not related to a specific solicitation for any covered Federal action, but that concern--

(A) The qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities; or

(B) The application or adaptation of the person's products or services for an agency's use.

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

(iv) Participating in technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(v) Making capability presentations prior to formal solicitation of any covered Federal action 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.

(2) Professional and technical services. (i) 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.

(ii) 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.

(iii) As used in paragraph (c)(2) of this clause, "professional and technical services" are limited to advice and analysis directly applying any professional or technical discipline (for examples, see FAR 3.803(a)(2)(iii)).

(iv) 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.

(3) Only those communications and services expressly authorized by paragraphs (c)(1) and (2) of this clause are permitted.

(d) Disclosure. (1) If the Contractor did not submit OMB Standard Form LLL, Disclosure of Lobbying Activities, with its offer, but registrants under the Lobbying Disclosure Act of 1995 have subsequently made a lobbying contact on behalf of the Contractor with respect to this contract, the Contractor shall complete and submit OMB Standard Form LLL to provide the name of the lobbying registrants, including the individuals performing the services.

(2) If the Contractor did submit OMB Standard Form LLL disclosure pursuant to paragraph (d) of the provision at FAR 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions, and a change occurs that affects Block 10 of the OMB Standard Form LLL (name and address of lobbying registrant or individuals performing services), the Contractor shall, at the end of the calendar quarter in which the change occurs, submit to the Contracting Officer within 30 days an updated disclosure using OMB Standard Form LLL.

(e) Penalties. (1) Any person who makes an expenditure prohibited under paragraph (b) of this clause or who fails to file or amend the disclosure to be filed or amended by paragraph (d) 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.

(g) Subcontracts. (1) The Contractor shall obtain a declaration, including the certification and disclosure in paragraphs (c) and (d) of the provision at FAR 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions, from each person requesting or receiving a subcontract exceeding \$150,000 under this contract. The Contractor or subcontractor that awards the subcontract shall retain the declaration.

(2) A copy of each subcontractor disclosure form (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall, at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor, submit to the Contracting Officer within 30 days a copy of all disclosures. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(3) The Contractor shall include the substance of this clause, including this paragraph (g), in any subcontract exceeding \$150,000.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.203-13 CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT (APR 2010)

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

Agent means any individual, including a director, an officer, an employee, or an independent Contractor, authorized to act on behalf of the organization.

Full cooperation—

(1) Means disclosure to the Government of the information sufficient for law enforcement to identify the nature and extent of the offense and the individuals responsible for the conduct. It includes providing timely and complete response to Government auditors' and investigators' request for documents and access to employees with information;

(2) Does not foreclose any Contractor rights arising in law, the FAR, or the terms of the contract. It does not require--

(i) A Contractor to waive its attorney-client privilege or the protections afforded by the attorney work product doctrine; or

(ii) Any officer, director, owner, or employee of the Contractor, including a sole proprietor, to waive his or her attorney client privilege or Fifth Amendment rights; and

(3) Does not restrict a Contractor from--

(i) Conducting an internal investigation; or

(ii) Defending a proceeding or dispute arising under the contract or related to a potential or disclosed violation.

Principal means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).

Subcontract means any contract entered into by a subcontractor to furnish supplies or services for performance of a prime contract or a subcontract.

Subcontractor means any supplier, distributor, vendor, or firm that furnished supplies or services to or for a prime contractor or another subcontractor.

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Code of business ethics and conduct. (1) Within 30 days after contract award, unless the Contracting Officer establishes a longer time period, the Contractor shall--

(i) Have a written code of business ethics and conduct;

(ii) Make a copy of the code available to each employee engaged in performance of the contract.

(2) The Contractor shall--

(i) Exercise due diligence to prevent and detect criminal conduct; and

(ii) Otherwise promote an organizational culture that encourages ethical conduct and a commitment to compliance with the law.

(3)(i) The Contractor shall timely disclose, in writing, to the agency Office of the Inspector General (OIG), with a copy to the Contracting Officer, whenever, in connection with the award, performance, or closeout of this contract or any subcontract thereunder, the Contractor has credible evidence that a principal, employee, agent, or subcontractor of the Contractor has committed--

(A) A violation of Federal criminal law involving fraud, conflict of interest, bribery, or gratuity violations found in Title 18 of the United States Code; or

(B) A violation of the civil False Claims Act (31 U.S.C. 3729-3733).

(ii) The Government, to the extent permitted by law and regulation, will safeguard and treat information obtained pursuant to the Contractor's disclosure as confidential where the information has been marked "confidential" or "proprietary" by the company. To the extent permitted by law and regulation, such information will not be released by the Government to the public pursuant to a Freedom of Information Act request, 5 U.S.C. Section 552, without prior notification to the Contractor. The Government may transfer documents provided by the Contractor to any department or agency within the Executive Branch if the information relates to matters within the organization's jurisdiction.

(iii) If the violation relates to an order against a Governmentwide acquisition contract, a multi-agency contract, a multiple-award schedule contract such as the Federal Supply Schedule, or any other procurement instrument

intended for use by multiple agencies, the Contractor shall notify the OIG of the ordering agency and the IG of the agency responsible for the basic contract.

(c) Business ethics awareness and compliance program and internal control system. This paragraph (c) does not apply if the Contractor has represented itself as a small business concern pursuant to the award of this contract or if this contract is for the acquisition of a commercial item as defined at FAR 2.101. The Contractor shall establish the following within 90 days after contract award, unless the Contracting Officer establishes a longer time period:

(1) An ongoing business ethics awareness and compliance program.

(i) This program shall include reasonable steps to communicate periodically and in a practical manner the Contractor's standards and procedures and other aspects of the Contractor's business ethics awareness and compliance program and internal control system, by conducting effective training programs and otherwise disseminating information appropriate to an individual's respective roles and responsibilities.

(ii) The training conducted under this program shall be provided to the Contractor's principals and employees, and as appropriate, the Contractor's agents and subcontractors.

(2) An internal control system.

(i) The Contractor's internal control system shall--

(A) Establish standards and procedures to facilitate timely discovery of improper conduct in connection with Government contracts; and

(B) Ensure corrective measures are promptly instituted and carried out.

(ii) At a minimum, the Contractor's internal control system shall provide for the following:

(A) Assignment of responsibility at a sufficiently high level and adequate resources to ensure effectiveness of the business ethics awareness and compliance program and internal control system.

(B) Reasonable efforts not to include an individual as a principal, whom due diligence would have exposed as having engaged in conduct that is in conflict with the Contractor's code of business ethics and conduct.

(C) Periodic reviews of company business practices, procedures, policies, and internal controls for compliance with the Contractor's code of business ethics and conduct and the special requirements of Government contracting, including--

(1) Monitoring and auditing to detect criminal conduct;

(2) Periodic evaluation of the effectiveness of the business ethics awareness and compliance program and internal control system, especially if criminal conduct has been detected; and

(3) Periodic assessment of the risk of criminal conduct, with appropriate steps to design, implement, or modify the business ethics awareness and compliance program and the internal control system as necessary to reduce the risk of criminal conduct identified through this process.

(D) An internal reporting mechanism, such as a hotline, which allows for anonymity or confidentiality, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(E) Disciplinary action for improper conduct or for failing to take reasonable steps to prevent or detect improper conduct.

(F) Timely disclosure, in writing, to the agency OIG, with a copy to the Contracting Officer, whenever, in connection with the award, performance, or closeout of any Government contract performed by the Contractor or a subcontractor thereunder, the Contractor has credible evidence that a principal, employee, agent, or subcontractor of the Contractor has committed a violation of Federal criminal law involving fraud, conflict of interest, bribery, or gratuity violations found in Title 18 U.S.C. or a violation of the civil False Claims Act (31 U.S.C. 3729-3733).

(1) If a violation relates to more than one Government contract, the Contractor may make the disclosure to the agency OIG and Contracting Officer responsible for the largest dollar value contract impacted by the violation.

(2) If the violation relates to an order against a Governmentwide acquisition contract, a multi-agency contract, a multiple-award schedule contract such as the Federal Supply Schedule, or any other procurement instrument intended for use by multiple agencies, the contractor shall notify the OIG of the ordering agency and the IG of the agency responsible for the basic contract, and the respective agencies' contracting officers.

(3) The disclosure requirement for an individual contract continues until at least 3 years after final payment on the contract.

(4) The Government will safeguard such disclosures in accordance with paragraph (b)(3)(ii) of this clause.

(G) Full cooperation with any Government agencies responsible for audits, investigations, or corrective actions.

(d) Subcontracts.

(1) The Contractor shall include the substance of this clause, including this paragraph (d), in subcontracts that have a value in excess of \$5,000,000 and a performance period of more than 120 days.

(2) In altering this clause to identify the appropriate parties, all disclosures of violation of the civil False Claims Act or of Federal criminal law shall be directed to the agency Office of the Inspector General, with a copy to the Contracting Officer.

(End of clause)

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52.204-4 Printed or Copied Double-Sided on Postconsumer Fiber Content Paper (May 2011)

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

Postconsumer fiber means—

(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.

(b) The Contractor is required to submit paper documents, such as offers, letters, or reports that are printed or copied double-sided on paper containing at least 30 percent postconsumer fiber, whenever practicable, when not using electronic commerce methods to submit information or data to the Government.

(End of clause)

52.204-10 REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS (AUG 2012)

(a) Definitions. As used in this clause:

Executive means officers, managing partners, or any other employees in management positions.

First-tier subcontract means a subcontract awarded directly by the Contractor for the purpose of acquiring supplies or services (including construction) for performance of a prime contract. It does not include the Contractor's supplier agreements with vendors, such as long-term arrangements for materials or supplies that benefit multiple contracts and/or the costs of which are normally applied to a Contractor's general and administrative expenses or indirect costs.

Month of award means the month in which a contract is signed by the Contracting Officer or the month in which a first-tier subcontract is signed by the Contractor.

Total compensation means the cash and noncash dollar value earned by the executive during the Contractor's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):

(1) Salary and bonus.

(2) Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Financial Accounting Standards Board's Accounting Standards Codification (FASB ASC) 718, Compensation-Stock Compensation.

(3) Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.

(4) Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.

(5) Above-market earnings on deferred compensation which is not tax-qualified.

(6) Other compensation, if the aggregate value of all such other compensation (e.g., severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.

(b) Section 2(d)(2) of the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. 109-282), as amended by section 6202 of the Government Funding Transparency Act of 2008 (Pub. L.

110-252), requires the Contractor to report information on subcontract awards. The law requires all reported information be made public, therefore, the Contractor is responsible for notifying its subcontractors that the required information will be made public.

(c) Nothing in this clause requires the disclosure of classified information.

(d)(1) Executive compensation of the prime contractor. As a part of its annual registration requirement in the Central Contractor Registration (CCR) database (FAR clause 52.204-7), the Contractor shall report the names and total compensation of each of the five most highly compensated executives for its preceding completed fiscal year, if—

(i) In the Contractor's preceding fiscal year, the Contractor received—

(A) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants), cooperative agreements, and other forms of Federal financial assistance; and

(B) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants), cooperative agreements, and other forms of Federal financial assistance; and

(ii) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

(2) First-tier subcontract information. Unless otherwise directed by the contracting officer, or as provided in paragraph (g) of this clause, by the end of the month following the month of award of a first-tier subcontract with a value of \$25,000 or more, the Contractor shall report the following information at <http://www.fsr.gov> for that first-tier subcontract. (The Contractor shall follow the instructions at <http://www.fsr.gov> to report the data.)

(i) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has a parent company.

(ii) Name of the subcontractor.

(iii) Amount of the subcontract award.

(iv) Date of the subcontract award.

(v) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.

(vi) Subcontract number (the subcontract number assigned by the Contractor).

(vii) Subcontractor's physical address including street address, city, state, and country. Also include the nine-digit zip code and congressional district.

(viii) Subcontractor's primary performance location including street address, city, state, and country. Also include the nine-digit zip code and congressional district.

(ix) The prime contract number, and order number if applicable.

(x) Awarding agency name and code.

(xi) Funding agency name and code.

(xii) Government contracting office code.

(xiii) Treasury account symbol (TAS) as reported in FPDS.

(xiv) The applicable North American Industry Classification System code (NAICS).

(3) Executive compensation of the first-tier subcontractor.

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of award of a first-tier subcontract with a value of \$25,000 or more, and annually thereafter (calculated from the prime contract award date), the Contractor shall report the names and total compensation of each of the five most highly compensated executives for that first-tier subcontractor for the first-tier subcontractor's preceding completed fiscal year at <http://www.fsrs.gov>, if—

(i) In the subcontractor's preceding fiscal year, the subcontractor received—

(A) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants), cooperative agreements, and other forms of Federal financial assistance; and

(B) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants), cooperative agreements, and other forms of Federal financial assistance; and

(ii) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

(e) The Contractor shall not split or break down first-tier subcontract awards to a value less than \$25,000 to avoid the reporting requirements in paragraph (d).

(f) The Contractor is required to report information on a first-tier subcontract covered by paragraph (d) when the subcontract is awarded. Continued reporting on the same subcontract is not required unless one of the reported data elements changes during the performance of the subcontract. The Contractor is not required to make further reports after the first-tier subcontract expires.

(g)(1) If the Contractor in the previous tax year had gross income, from all sources, under \$300,000, the Contractor is exempt from the requirement to report subcontractor awards.

(2) If a subcontractor in the previous tax year had gross income from all sources under \$300,000, the Contractor does not need to report awards for that subcontractor.

(h) The FSRS database at <http://www.fsrs.gov> will be prepopulated with some information from CCR and FPDS databases. If FPDS information is incorrect, the contractor should notify the contracting officer. If the CCR database information is incorrect, the contractor is responsible for correcting this information.

(End of clause)

CENTRAL CONTRACTOR REGISTRATION MAINTENANCE (DEC 2012)

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

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

Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities, which is used as the identification number for Federal Contractors.

Data Universal Numbering System+4 (DUNS+4) number means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see the FAR at subpart 32.11) for the same concern.

Registered in the CCR database means that—

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database; and

(2) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS), and has marked the record ``Active''. The Contractor will be required to provide consent for TIN validation to the Government as a part of the CCR registration process.

(b) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, 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 review and update on an annual basis, from the date of initial registration or subsequent updates, its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(c)(1)(i) If a Contractor has legally changed its business name, doing business as name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to—

(A) Change the name in the CCR database;

(B) Comply with the requirements of subpart 42.12 of the FAR; and

(C) Agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor shall provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph

(c)(1)(i) of this clause, or fails to perform the agreement at paragraph (c)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be

other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the EFT clause of this contract.

(3) The Contractor shall ensure that the DUNS number is maintained with Dun & Bradstreet throughout the life of the contract. The Contractor shall communicate any change to the DUNS number to the Contracting Officer within 30 days after the change, so an appropriate modification can be issued to update the data on the contract. A change in the DUNS number does not necessarily require a novation be accomplished. Dun & Bradstreet may be contacted—

(i) Via the internet at <http://fedgov.dnb.com/webform> or if the Contractor does not have internet access, it may call Dun and Bradstreet at 1-866-705-5711 if located within the United States; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(d) Contractors may obtain additional information on registration and annual confirmation requirements at <https://www.acquisition.gov>.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (DEC 2010)

(a) Definition. Commercially available off-the-shelf (COTS) item, as used in this clause--

(1) Means any item of supply (including construction material) that is--

(i) A commercial item (as defined in paragraph (1) of the definition in FAR 2.101);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in section 3 of the Shipping Act of 1984 (46 U.S.C. App. 1702), such as agricultural products and petroleum products.

(b) The Government suspends or debar Contractors to protect the Government's interests. Other than a subcontract for a commercially available off-the-shelf item, the Contractor shall not enter into any subcontract, in excess of \$30,000 with a Contractor that is debarred, suspended, or proposed for debarment by any executive agency unless there is a compelling reason to do so.

(c) The Contractor shall require each proposed subcontractor whose subcontract will exceed \$30,000, other than a subcontractor providing a commercially available off-the-shelf item, 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.

(d) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party (other than a subcontractor providing a commercially available off-the-shelf item) that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the Excluded Parties List System). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being in the Excluded Parties List System.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion in the Excluded Parties List System.

(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.

(e) Subcontracts. Unless this is a contract for the acquisition of commercial items, the Contractor shall include the requirements of this clause, including this paragraph (e) (appropriately modified for the identification of the parties), in each subcontract that--

(1) Exceeds \$30,000 in value; and

(2) Is not a subcontract for commercially available off-the-shelf items.

(End of clause)

52.209-9 UPDATES OF PUBLICLY AVAILABLE INFORMATION REGARDING RESPONSIBILITY MATTERS (FEB 2012)

(a) The Contractor shall update the information in the Federal Awardee Performance and Integrity Information System (FAPIS) on a semi-annual basis, throughout the life of the contract, by posting the required information in the Central Contractor Registration database via <https://www.acquisition.gov>.

(b) As required by section 3010 of the Supplemental Appropriations Act, 2010 (Pub. L. 111-212), all information posted in FAPIS on or after April 15, 2011, except past performance reviews, will be publicly available. FAPIS consists of two segments--

(1) The non-public segment, into which Government officials and the Contractor post information, which can only be viewed by--

(i) Government personnel and authorized users performing business on behalf of the Government; or

(ii) The Contractor, when viewing data on itself; and

(2) The publicly-available segment, to which all data in the non-public segment of FAPIIS is automatically transferred after a waiting period of 14 calendar days, except for--

(i) Past performance reviews required by subpart 42.15;

(ii) Information that was entered prior to April 15, 2011; or

(iii) Information that is withdrawn during the 14-calendar-day waiting period by the Government official who posted it in accordance with paragraph (c)(1) of this clause.

(c) The Contractor will receive notification when the Government posts new information to the Contractor's record.

(1) If the Contractor asserts in writing within 7 calendar days, to the Government official who posted the information, that some of the information posted to the non-public segment of FAPIIS is covered by a disclosure exemption under the Freedom of Information Act, the Government official who posted the information must within 7 calendar days remove the posting from FAPIIS and resolve the issue in accordance with agency Freedom of Information procedures, prior to reposting the releasable information. The contractor must cite 52.209-9 and request removal within 7 calendar days of the posting to FAPIIS.

(2) The Contractor will also have an opportunity to post comments regarding information that has been posted by the Government. The comments will be retained as long as the associated information is retained, i.e., for a total period of 6 years. Contractor comments will remain a part of the record unless the Contractor revises them.

(3) As required by section 3010 of Pub. L. 111-212, all information posted in FAPIIS on or after April 15, 2011, except past performance reviews, will be publicly available.

(d) Public requests for system information posted prior to April 15, 2011, will be handled under Freedom of Information Act procedures, including, where appropriate, procedures promulgated under E.O. 12600.

(End of clause)

52.209-10 Prohibition on Contracting With Inverted Domestic Corporations. (MAY 2012)

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

Inverted domestic corporation means a foreign incorporated entity which is treated as an inverted domestic corporation under 6 U.S.C. 395(b), i.e., a corporation that used to be incorporated in the United States, or used to be a partnership in the United States, but now is incorporated in a foreign country, or is a subsidiary whose parent corporation is incorporated in a foreign country, that meets the criteria specified in 6 U.S.C. 395(b), applied in accordance with the rules and definitions of 6 U.S.C. 395(c). An inverted domestic corporation as herein defined does not meet the definition of an inverted domestic corporation as defined by the Internal Revenue Code at 26 U.S.C. 7874.

Subsidiary means an entity in which more than 50 percent of the entity is owned--

(1) Directly by a parent corporation; or

(2) Through another subsidiary of a parent corporation.

(b) If the contractor reorganizes as an inverted domestic corporation or becomes a subsidiary of an inverted domestic corporation at any time during the period of performance of this contract, the Government may be

prohibited from paying for Contractor activities performed after the date when it becomes an inverted domestic corporation or subsidiary. The Government may seek any available remedies in the event the Contractor fails to perform in accordance with the terms and conditions of the contract as a result of Government action under this clause.

(c) Exceptions to this prohibition are located at 9.108-2.

(End of clause)

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

The Contractor shall be required to (a) commence work under this contract within **ten (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 **. 270 days from date of notice to proceed*** The time stated for completion shall include final cleanup of the premises.

(End of clause)

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52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$560.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

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52.211-13 TIME EXTENSIONS (SEP 2000)

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that

the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

(End of clause)

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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.

52.211-5001 VARIATIONS IN ESTIMATED QUANTITIES, SUBDIVIDED ITEMS (MAR 1995)

This variation in estimated quantities clause is applicable only to Items Nos. 0021 thru 0023.

(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. 0021 thru 0023 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 52.212-11, Variation in Estimated Quantities.

(c) If the actual quantity of work performed under Items Nos. 0021 thru 0023 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. 0021 thru 0023 exceeds 115% or is less than 85% of the estimated quantity of any such sub-item, and if such variation causes an increase or a decrease in the time required for performance of this contract the contract completion time will be adjusted in accordance with the clause FAR 52.212-11, Variation in Estimated Quantities.

(End of clause)

52.215-2 AUDIT AND RECORDS--NEGOTIATION (OCT 2010)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in

any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Certified cost or pricing data. If the Contractor has been required to submit certified cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the certified cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the contract, subcontract, or modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the contract, subcontract, or modification; or

(4) Performance of the contract, subcontract or modification.

(d) Comptroller General. (1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder and to interview any current employee regarding such transactions.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any

combination of these;

- (2) For which certified cost or pricing data are required; or
- (3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

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52.215-8 ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (OCT 1997)

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.
- (e) The specifications.

(End of clause)

52.215-10 PRICE REDUCTION FOR DEFECTIVE CERTIFIED COST OR PRICING DATA (AUG 2011)

(a) If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because--

- (1) The Contractor or a subcontractor furnished certified cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;
- (2) A subcontractor or prospective subcontractor furnished the Contractor certified cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or
- (3) Any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction.

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

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

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

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

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

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

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

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

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the certified cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

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

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

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

(1) Interest compounded daily, as required by 26 U.S.C. 6622, on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted certified cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-11 PRICE REDUCTION FOR DEFECTIVE CERTIFIED COST OR PRICING DATA--
MODIFICATIONS (AUG 2011)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

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

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

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

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

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

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

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

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

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

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the certified cost or pricing data were available before the “as of” date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

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

(A) The understated data were known by the Contractor to be understated before the “as of” date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the “as of” date specified on its Certificate of Current Cost or Pricing Data.

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

(1) Interest compounded daily, as required by 26 U.S.C. 6622, on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted certified cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-12 SUBCONTRACTOR CERTIFIED COST OR PRICING DATA (OCT 2010)

(a) Before awarding any subcontract expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit certified cost or pricing data (actually or by specific identification in writing), in accordance with FAR 15.408, Table 15-2 (to include any information reasonably required to explain the subcontractor's estimating process such as the judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data, and the nature and amount of any contingencies included in the price), unless an exception under FAR 15.403-1 applies.

(b) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(c) In each subcontract that exceeds the threshold for submission of certified cost or pricing data at FAR 15.403-4, when entered into, the Contractor shall insert either--

(1) The substance of this clause, including this paragraph (c), if paragraph (a) of this clause requires submission of certified cost or pricing data for the subcontract; or

(2) The substance of the clause at FAR 52.215-13, Subcontractor Certified Cost or Pricing Data--Modifications.

52.215-13 SUBCONTRACTOR CERTIFIED COST OR PRICING DATA--MODIFICATIONS (OCT 2010)

(a) The requirements of paragraphs (b) and (c) of this clause shall--

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of certified cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit certified cost or pricing data (actually or by specific identification in writing), in accordance with FAR 15.408, Table 15-2 (to include any information reasonably required to explain the subcontractor's estimating process such as the judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data, and the nature and amount of any contingencies included in the price), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of certified cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (JAN 2011)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns 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, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(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--

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.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

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

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

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

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1)(i) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 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 CCR Dynamic Small Business Search database maintained by the Small Business Administration, or

(2) It represents in writing that it qualifies as a small disadvantaged business (SDB) for any Federal subcontracting program, and believes in good faith that it is owned and controlled by one or more socially and economically disadvantaged individuals and meets the SDB eligibility criteria of 13 CFR 124.1002.

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

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

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

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

(1) That is at least 51 percent owned by one or more women, 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)(1) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(2) The Contractor shall confirm that a subcontractor representing itself as a HUBZone small business concern is certified by SBA as a HUBZone small business concern by accessing the Central Contractor Registration (CCR) database or by contacting the SBA. Options for contacting the SBA include--

(i) HUBZone small business database search application Web page at http://dsbs.sba.gov/dsbs/search/dsp_searchhubzone.cfm; or <http://www.sba.gov/hubzone>;

(ii) In writing to the Director/HUB, U.S. Small Business Administration, 409 3rd Street, SW., Washington DC 20416; or

(iii) The SBA HUBZone Help Desk at hubzone@sba.gov.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (NOV 2011)

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

(b) Applicability. This clause applies only to--

(1) Contracts that have been set aside or reserved for small business concerns or 8(a) concerns;

(2) Part or parts of a multiple-award contract that have been set aside for small business concerns or 8(a) concerns; and

(3) Orders set aside for small business or 8(a) concerns under multiple-award contracts as described in 8.405-5 and 16.505(b)(2)(i)(F).

(c) 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.

CLAUSES INCORPORATED BY FULL TEXT

52.222-3 CONVICT LABOR (JUN 2003)

(a) Except as provided in paragraph (b) of this clause, the Contractor shall not employ in the performance of this contract any person undergoing a sentence of imprisonment imposed by any court of a State, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.

(b) The Contractor is not prohibited from employing persons--

(1) On parole or probation to work at paid employment during the term of their sentence;

(2) Who have been pardoned or who have served their terms; or

(3) Confined for violation of the laws of any of the States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(i) The worker is paid or is in an approved work training program on a voluntary basis;

(ii) Representatives of local union central bodies or similar labor union organizations have been consulted;

(iii) 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;

(iv) 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

(v) 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)

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52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME
COMPENSATION. (JUL 2005)

(a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts that may require or involve the employment of laborers and mechanics and require subcontractors to include these provisions in any such lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (JUL 2005)

(a) Definition.—“Site of the work”—

(1) Means—

(i) *The primary site of the work.* The physical place or places where the construction called for in the contract will remain when work on it is completed; and

(ii) *The secondary site of the work, if any.* Any other site where a significant portion of the building or work is constructed, provided that such site is—

(A) Located in the United States; and

(B) Established specifically for the performance of the contract or project;

(2) Except as provided in paragraph (3) of this definition, includes any fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards, etc., provided—

(i) They are dedicated exclusively, or nearly so, to performance of the contract or project; and

(ii) They are adjacent or virtually adjacent to the “primary site of the work” as defined in paragraph (a)(1)(i), or the “secondary site of the work” as defined in paragraph (a)(1)(ii) of this definition;

(3) Does not include permanent home offices, branch plant establishments, fabrication plants, or tool yards of a Contractor or subcontractor whose locations and continuance in operation are determined wholly without regard to a particular Federal contract or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, yards, etc., of a commercial or material supplier which are established by a supplier of materials for the project before opening of bids and not on the Project site, are not included in the “site of the work.” Such permanent, previously established facilities are not a part of the “site of the work” even if the operations for a period of time may be dedicated exclusively or nearly so, to the performance of a contract.

(b)(1) 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, or as may be incorporated for a secondary site of the work, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Any wage determination incorporated for a secondary site of the work shall be effective from the first day on which work under the contract was performed at that site and shall be incorporated without any adjustment in contract price or estimated cost. Laborers employed by the construction Contractor or construction subcontractor that are transporting portions of the building or work between the secondary site of the work and the primary site of the work shall be paid in accordance with the wage determination applicable to the primary site of the work.

(2) 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 (e) 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.

(3) 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.

(4) The wage determination (including any additional classifications and wage rates conformed under paragraph (c) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the primary site of the work and the secondary site of the work, if any, in a prominent and accessible place where it can be easily seen by the workers.

(c)(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 paragraphs (c)(2) and (c)(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.

(d) 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.

(e) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may

require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

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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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.222-8 PAYROLLS AND BASIC RECORDS (JUN 2010)

(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, except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be obtained from the U.S. Department of Labor Wage and Hour Division website at <http://www.dol.gov/whd/forms/wh347.pdf>. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Contracting Officer, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a Prime Contractor to require a subcontractor to provide addresses and social security numbers to the Prime Contractor for its own records, without weekly submission to the Contracting Officer.

(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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.222-9 APPRENTICES AND TRAINEES (JUL 2005)

(a) Apprentices. (1) An apprentice will be permitted to work at less than the predetermined rate for the work performed when employed--

(i) Pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer, and Labor Services (OATELS) or with a State Apprenticeship Agency recognized by the OATELS; or

(ii) In the first 90 days of probationary employment as an apprentice in such an apprenticeship program, even though not individually registered in the program, if certified by the OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) 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.

(3) Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph (a)(1) of this clause, 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.

(4) 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.

(5) 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.

(6) In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, 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.

(1) 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, Office of Apprenticeship Training, Employer, and Labor Services (OATELS). The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by OATELS.

(2) 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 OATELS 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.

(3) In the event OATELS withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.222-11 SUBCONTRACTS (LABOR STANDARDS) (JUL 2005)

(a) Definition. Construction, alteration or repair, as used in this clause, means all types of work done by laborers and mechanics employed by the construction Contractor or construction subcontractor on a particular building or work at the site thereof, including without limitation--

(1) Altering, remodeling, installation (if appropriate) on the site of the work of items fabricated off-site;

(2) Painting and decorating;

(3) Manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work;

(4) Transportation of materials and supplies between the site of the work within the meaning of paragraphs (a)(1)(i) and (ii) of the "site of the work" as defined in the FAR clause at 52.222-6, Davis-Bacon Act of this contract, and a facility which is dedicated to the construction of the building or work and is deemed part of the site of the work within the meaning of paragraph (2) of the "site of work" definition; and

(5) Transportation of portions of the building or work between a secondary site where a significant portion of the building or work is constructed, which is part of the "site of the work" definition in paragraph (a)(1)(ii) of the FAR clause at 52.222-6, Davis-Bacon Act, and the physical place or places where the building or work will remain (paragraph (a)(1)(i) of the FAR clause at 52.222-6, in the "site of the work" definition).

(b) The Contractor shall insert in any subcontracts for construction, alterations and repairs within the United States the clauses entitled--

- (1) Davis-Bacon Act;
- (2) Contract Work Hours and Safety Standards Act--Overtime Compensation (if the clause is included in this contract);
- (3) Apprentices and Trainees;
- (4) Payrolls and Basic Records;
- (5) Compliance with Copeland Act Requirements;
- (6) Withholding of Funds;
- (7) Subcontracts (Labor Standards);
- (8) Contract Termination--Debarment;
- (9) Disputes Concerning Labor Standards;
- (10) Compliance with Davis-Bacon and Related Act Regulations; and
- (11) Certification of Eligibility.

(c) The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor performing construction within the United States with all the contract clauses cited in paragraph (b).

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

(e) The Contractor shall insert the substance of this clause, including this paragraph (e) in all subcontracts for construction within the United States.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

52.222-19 CHILD LABOR--COOPERATION WITH AUTHORITIES AND REMEDIES (MAR 2012)

(a) Applicability. This clause does not apply to the extent that the Contractor is supplying end products mined, produced, or manufactured in--

(1) Canada, and the anticipated value of the acquisition is \$25,000 or more;

(2) Israel, and the anticipated value of the acquisition is \$50,000 or more;

(3) Mexico, and the anticipated value of the acquisition is \$77,494 or more; or

(4) Armenia, Aruba, Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Italy, Japan, Korea, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan or the United Kingdom and the anticipated value of the acquisition is \$202,000 or more.

(b) Cooperation with Authorities. To enforce the laws prohibiting the manufacture or importation of products mined, produced, or manufactured by forced or indentured child labor, authorized officials may need to conduct investigations to determine whether forced or indentured child labor was used to mine, produce, or manufacture any product furnished under this contract. If the solicitation includes the provision 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products, or the equivalent at 2.212-3(i), the Contractor agrees to cooperate fully with authorized officials of the contracting agency, the Department of the Treasury, or the Department of Justice by providing reasonable access to records, documents, persons, or premises upon reasonable request by the authorized officials.

(c) Violations. The Government may impose remedies set forth in paragraph (d) for the following violations:

(1) The Contractor has submitted a false certification regarding knowledge of the use of forced or indentured child labor for listed end products.

(2) The Contractor has failed to cooperate, if required, in accordance with paragraph (b) of this clause, with an investigation of the use of forced or indentured child labor by an Inspector General, Attorney General, or the Secretary of the Treasury.

(3) The Contractor uses forced or indentured child labor in its mining, production, or manufacturing processes.

(4) The Contractor has furnished under the contract end products or components that have been mined, produced, or manufactured wholly or in part by forced or indentured child labor. (The Government will not pursue remedies at paragraph (d)(2) or paragraph (d)(3) of this clause unless sufficient evidence indicates that the Contractor knew of the violation.)

(d) Remedies. (1) The Contracting Officer may terminate the contract.

(2) The suspending official may suspend the Contractor in accordance with procedures in FAR Subpart 9.4.

(3) The debaring official may debar the Contractor for a period not to exceed 3 years in accordance with the procedures in FAR Subpart 9.4.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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)

52.222-26 EQUAL OPPORTUNITY (MAR 2007)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b)(1) 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 this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(2) If the Contractor is a religious corporation, association, educational institution, or society, the requirements of this clause do not apply with respect to the employment of individuals of a particular religion to perform work connected with the carrying on of the Contractor's activities (41 CFR 60-1.5).

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

(End of clause)

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.

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

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR VETERANS (SEP 2010)

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

All employment openings means all positions except executive and senior 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.

Armed Forces service medal veteran means any veteran who, while serving on active duty in the U.S. military, ground, naval, or air service, participated in a United States military operation for which an Armed Forces service medal was awarded pursuant to Executive Order 12985 (61 FR 1209).

Disabled veteran means--

- (1) A veteran of the U.S. military, ground, naval, or air service, who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Secretary of Veterans Affairs; or
- (2) A person who was discharged or released from active duty because of a service-connected disability.

Executive and senior management means—

(1) Any employee--

(i) Compensated on a salary basis at a rate of not less than \$455 per week (or \$380 per week, if employed in American Samoa by employers other than the Federal Government), exclusive of board, lodging or other facilities;

(ii) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(iii) Who customarily and regularly directs the work of two or more other employees; and

(iv) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight; or

(2) Any employee who owns at least a bona fide 20-percent equity interest in the enterprise in which the employee is employed, regardless of whether the business is a corporate or other type of organization, and who is actively engaged in its management.

Other protected veteran means a veteran who served on active duty in the U.S. military, ground, naval, or air service, during a war or in a campaign or expedition for which a campaign badge has been authorized under the laws administered by the Department of Defense.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings 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.

Qualified disabled veteran means a disabled veteran who has the ability to perform the essential functions of the employment positions with or without reasonable accommodation.

Recently separated veteran means any veteran during the three-year period beginning on the date of such veteran's discharge or release from active duty in the U.S. military, ground, naval or air service.

(b) General.

(1) The Contractor shall not discriminate against any employee or applicant for employment because the individual is a disabled veteran, recently separated veteran, other protected veterans, or Armed Forces service medal veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified individuals, including qualified disabled veterans, without discrimination based upon their status as a disabled veteran, recently separated veteran, Armed Forces service medal veteran, and other protected veteran in all employment practices including the following:

- (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) Rate 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 apprenticeship, and on-the-job training under 38 U.S.C. 3687, 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.
- (ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(3) The Department of Labor's regulations require contractors with 50 or more employees and a contract of \$100,000 or more to have an affirmative action program for veterans. See 41 CFR part 60-300, subpart C.

(c) Listing openings.

(1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate employment service delivery system where the opening occurs. Listing employment openings with the State workforce agency job bank or with the local employment service delivery system where the opening occurs shall satisfy the requirement to list jobs with the appropriate employment service delivery system.

(2) The Contractor shall make the listing of employment openings with the appropriate employment service delivery system at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings 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.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State workforce agency 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 agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency 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, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(e) Postings.

(1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are disabled veterans, recently separated veterans, Armed Forces service medal veterans, and other protected veterans; and

(ii) Be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) 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, recently separated veterans, other protected veterans, and Armed Forces service medal veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor. This includes implementing any sanctions imposed on a contractor by the Department of Labor for violations of this clause (52.222-35, Equal Opportunity for Veterans). These sanctions (see 41 CFR 60-300.66) may include--

(1) Withholding progress payments;

(2) Termination or suspension of the contract; or

(3) Debarment of the contractor.

(g) Subcontracts. The Contractor shall insert the terms of this clause in subcontracts of \$100,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs, to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (OCT 2010)

(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 \$15,000 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 VETERANS (SEP 2010)

(a) Definitions. As used in this clause, "Armed Forces service medal veteran," "disabled veteran," "other protected veteran," and "recently separated veteran," have the meanings given in the Equal Opportunity for Veterans clause 52.222-35.

(b) 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 total number of employees in the contractor's workforce, by job category and hiring location, who are disabled veterans, other protected veterans, Armed Forces service medal veterans, and recently separated veterans.

(2) The total number of new employees hired during the period covered by the report, and of the total, the number of disabled veterans, other protected veterans, Armed Forces service medal veterans, and recently separated veterans; and

(3) The maximum number and minimum number of employees of the Contractor or subcontractor at each hiring location during the period covered by the report.

(c) The Contractor shall report the above items by completing the Form VETS-100A, entitled "Federal Contractor Veterans' Employment Report (VETS-100A Report)."

(d) The Contractor shall submit VETS-100A Reports no later than September 30 of each year.

(e) The employment activity report required by paragraphs (b)(2) and (b)(3) of this clause shall reflect total new hires, and maximum and minimum number of employees, during the most recent 12-month period preceding the ending date selected for the report. Contractors may select an ending date--

(1) As of the end of any pay period between July 1 and August 31 of the year the report is due; or

(2) As of December 31, if the Contractor has prior written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(f) The number of veterans reported must be based on data known to the contractor when completing the VETS-100A. The contractor's knowledge of veterans status may be obtained in a variety of ways, including an invitation to applicants to self-identify (in accordance with 41 CFR 60-300.42), voluntary self-disclosure by employees, or actual knowledge of veteran status by the contractor. This paragraph does not relieve an employer of liability for discrimination under 38 U.S.C. 4212.

(g) The Contractor shall insert the terms of this clause in subcontracts of \$100,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT**52.222-50 COMBATING TRAFFICKING IN PERSONS (FEB 2009)**

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

Coercion means--

- (1) Threats of serious harm to or physical restraint against any person;
- (2) Any scheme, plan, or pattern intended to cause a person to believe that failure to perform an act would result in serious harm to or physical restraint against any person; or
- (3) The abuse or threatened abuse of the legal process.

Commercial sex act means any sex act on account of which anything of value is given to or received by any person.

Debt bondage means the status or condition of a debtor arising from a pledge by the debtor of his or her personal services or of those of a person under his or her control as a security for debt, if the value of those services as reasonably assessed is not applied toward the liquidation of the debt or the length and nature of those services are not respectively limited and defined.

Employee means an employee of the Contractor directly engaged in the performance of work under the contract who has other than a minimal impact or involvement in contract performance.

Forced Labor means knowingly providing or obtaining the labor or services of a person--

- (1) By threats of serious harm to, or physical restraint against, that person or another person;
- (2) By means of any scheme, plan, or pattern intended to cause the person to believe that, if the person did not perform such labor or services, that person or another person would suffer serious harm or physical restraint; or
- (3) By means of the abuse or threatened abuse of law or the legal process.

Involuntary servitude includes a condition of servitude induced by means of--

- (1) Any scheme, plan, or pattern intended to cause a person to believe that, if the person did not enter into or continue in such conditions, that person or another person would suffer serious harm or physical restraint; or
- (2) The abuse or threatened abuse of the legal process.

Severe forms of trafficking in persons means--

- (1) Sex trafficking in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such act has not attained 18 years of age; or
- (2) The recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery.

Sex trafficking means the recruitment, harboring, transportation, provision, or obtaining of a person for the purpose of a commercial sex act.

(b) Policy. The United States Government has adopted a zero tolerance policy regarding trafficking in persons. Contractors and contractor employees shall not--

- (1) Engage in severe forms of trafficking in persons during the period of performance of the contract;

- (2) Procure commercial sex acts during the period of performance of the contract; or
 - (3) Use forced labor in the performance of the contract.
- (c) Contractor requirements. The Contractor shall--
- (1) Notify its employees of--
 - (i) The United States Government's zero tolerance policy described in paragraph (b) of this clause; and
 - (ii) The actions that will be taken against employees for violations of this policy. Such actions may include, but are not limited to, removal from the contract, reduction in benefits, or termination of employment; and
 - (2) Take appropriate action, up to and including termination, against employees or subcontractors that violate the policy in paragraph (b) of this clause.
- (d) Notification. The Contractor shall inform the Contracting Officer immediately of--
- (1) Any information it receives from any source (including host country law enforcement) that alleges a Contractor employee, subcontractor, or subcontractor employee has engaged in conduct that violates this policy; and
 - (2) Any actions taken against Contractor employees, subcontractors, or subcontractor employees pursuant to this clause.
- (e) Remedies. In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (c), (d), or (f) of this clause may result in --
- (1) Requiring the Contractor to remove a Contractor employee or employees from the performance of the contract;
 - (2) Requiring the Contractor to terminate a subcontract;
 - (3) Suspension of contract payments;
 - (4) Loss of award fee, consistent with the award fee plan, for the performance period in which the Government determined Contractor non-compliance;
 - (5) Termination of the contract for default or cause, in accordance with the termination clause of this contract; or
 - (6) Suspension or debarment.
- (f) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (f), in all subcontracts.
- (g) Mitigating Factor. The Contracting Officer may consider whether the Contractor had a Trafficking in Persons awareness program at the time of the violation as a mitigating factor when determining remedies. Additional information about Trafficking in Persons and examples of awareness programs can be found at the website for the Department of State's Office to Monitor and Combat Trafficking in Persons at <http://www.state.gov/g/tip>.
- (End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(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)

52.223-18 ENCOURAGING CONTRACTOR POLICIES TO BAN TEXT MESSAGING WHILE DRIVING (AUG 2011)

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

Driving—

(1) Means operating a motor vehicle on an active roadway with the motor running, including while temporarily stationary because of traffic, a traffic light, stop sign, or otherwise.

(2) Does not include operating a motor vehicle with or without the motor running when one has pulled over to the side of, or off, an active roadway and has halted in a location where one can safely remain stationary.

Text messaging means reading from or entering data into any handheld or other electronic device, including for the purpose of short message service texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication. The term does not include glancing at or listening to a navigational device that is secured in a commercially designed holder affixed to the vehicle, provided that the destination and route are programmed into the device either before driving or while stopped in a location off the roadway where it is safe and legal to park.

(b) This clause implements Executive Order 13513, Federal Leadership on Reducing Text Messaging while Driving, dated October 1, 2009.

(c) The Contractor is encouraged to--

(1) Adopt and enforce policies that ban text messaging while driving--

(i) Company-owned or -rented vehicles or Government-owned vehicles; or

(ii) Privately-owned vehicles when on official Government business or when performing any work for or on behalf of the Government.

(2) Conduct initiatives in a manner commensurate with the size of the business, such as--

(i) Establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and

(ii) Education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

(d) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (d), in all subcontracts that exceed the micro-purchase threshold.

(End of clause)

52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (SEP 2010)

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

Commercially available off-the-shelf (COTS) item—

(1) Means any item of supply (including construction material) that is--

(i) A commercial item (as defined in paragraph (1) of the definition at FAR 2.101);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in section 3 of the Shipping Act of 1984 (46 U.S.C. App. 1702), such as agricultural products and petroleum products.

Component means an article, material, or supply incorporated directly into a construction material.

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 construction material (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 construction material.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States;

(2) A construction material manufactured in the United States, if--

(i) 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; or

(ii) The construction material is a COTS item.

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

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference.

(1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. In accordance with 41 U.S.C. 431, the component test of the Buy American Act is waived for construction material that is a COTS item (See FAR 12.505(a)(2)). 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 information technology that is a commercial item or to the construction materials or components listed by the Government as follows:

(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;

(ii) The application of the restriction of the Buy American Act 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. (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 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 applies, use of foreign construction material is noncompliant with the Buy American Act.

(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)

CLAUSES INCORPORATED BY FULL TEXT

52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT--CONSTRUCTION MATERIALS (FEB 2009)

(a) Definitions. "Commercially available off-the-shelf (COTS) item," "construction material," "domestic construction material," and "foreign construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

CLAUSES INCORPORATED BY FULL TEXT

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2008)

(a) Except as authorized by the Office of Foreign Assets Control (OFAC) in the Department of the Treasury, the Contractor shall not acquire, for use in the performance of this contract, any supplies or services if any proclamation, Executive order, or statute administered by OFAC, or if OFAC's implementing regulations at 31 CFR chapter V, would prohibit such a transaction by a person subject to the jurisdiction of the United States.

(b) Except as authorized by OFAC, most transactions involving Cuba, Iran, and Sudan are prohibited, as are most imports from Burma or North Korea, into the United States or its outlying areas. Lists of entities and individuals subject to economic sanctions are included in OFAC's List of Specially Designated Nationals and Blocked Persons at [TerList1.html](http://www.treas.gov/offices/enforcement/ofac/). More information about these restrictions, as well as updates, is available in the OFAC's regulations at 31 CFR chapter V and/or on OFAC's Web site at <http://www.treas.gov/offices/enforcement/ofac/>.

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

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.227-1 AUTHORIZATION AND CONSENT (DEC 2007)

(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 United States patent 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 shall include the substance of this clause, including this paragraph (b), in all subcontracts that are 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.

(End of clause)

52.228-11 PLEDGES OF ASSETS (JAN 2012)

(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) A mortgagee title insurance policy, in an insurance amount equal to the amount of the lien, or other evidence of title that is consistent with the requirements of Section 2 of the United States Department of Justice Title Standards at http://www.justice.gov/enrd/ENRD_Assets/Title_Standards_2001.pdf. 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)

CLAUSES INCORPORATED BY FULL TEXT

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)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (OCT 2010)

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

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$150,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of the Treasury, Financial Management Service, Surety Bond Branch, 3700 East West Highway, Room 6F01, Hyattsville, MD 20782. Or via the internet at <http://www.fms.treas.gov/c570/>.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 3133(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (FEB 2013)

(a) As used in this clause—

“After-imposed Federal tax” 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” 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.

“All applicable Federal, State, and local taxes and duties” 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.

“Contract date” 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.

“Local taxes” includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(b)(1) The contract price includes all applicable Federal, State, and local taxes and duties, except as provided in subparagraph (b)(2)(i) of this clause.

(2) Taxes imposed under 26 U.S.C. 5000C may not be—

(i) Included in the contract price; nor

(ii) Reimbursed.

(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)

52.231-5000 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 5. 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)

CLAUSES INCORPORATED BY FULL TEXT

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(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) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, 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.

(End of clause)

52.232-16 PROGRESS PAYMENTS (APR 2012)

The Government will make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts of \$2,500 or more approved by the Contracting Officer, under the following conditions:

(a) Computation of amounts. (1) Unless the Contractor requests a smaller amount, the Government will compute each progress payment as 80 percent of the Contractor's total costs incurred under this contract whether or not actually paid, plus financing payments to subcontractors (see paragraph (j) of this clause), less the sum of all previous progress payments made by the Government under this contract. The Contracting Officer will consider cost of money that would be allowable under FAR 31.205-10 as an incurred cost for progress payment purposes.

(2) The amount of financing and other payments for supplies and services purchased directly for the contract are limited to the amounts that have been paid by cash, check, or other forms of payment, or that are determined due and will be paid to subcontractors--

(i) In accordance with the terms and conditions of a subcontract or invoice; and

(ii) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(3) The Government will exclude accrued costs of Contractor contributions under employee pension plans until actually paid unless--

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's total costs for progress payments until paid).

(4) The Contractor shall not include the following in total costs for progress payment purposes in paragraph (a)(1) of this clause:

(i) Costs that are not reasonable, allocable to this contract, and consistent with sound and generally accepted accounting principles and practices.

(ii) Costs incurred by subcontractors or suppliers.

(iii) Costs ordinarily capitalized and subject to depreciation or amortization except for the properly depreciated or amortized portion of such costs.

(iv) Payments made or amounts payable to subcontractors or suppliers, except for --

(A) Completed work, including partial deliveries, to which the Contractor has acquired title; and

(B) Work under cost-reimbursement or time-and-material subcontracts to which the Contractor has acquired title.

(5) The amount of unliquidated progress payments may exceed neither (i) the progress payments made against incomplete work (including allowable unliquidated progress payments to subcontractors) nor

(ii) the value, for progress payment purposes, of the incomplete work. Incomplete work shall be considered to be the supplies and services required by this contract, for which delivery and invoicing by the Contractor and acceptance by the Government are incomplete.

(6) The total amount of progress payments shall not exceed 80 percent of the total contract price.

(7) If a progress payment or the unliquidated progress payments exceed the amounts permitted by subparagraphs (a)(4) or (a)(5) of this clause, the Contractor shall repay the amount of such excess to the Government on demand.

(8) Notwithstanding any other terms of the contract, the Contractor agrees not to request progress payments in dollar amounts of less than \$2,500. The Contracting Officer may make exceptions.

(9) The costs applicable to items delivered, invoiced, and accepted shall not include costs in excess of the contract price of the items.

(b) Liquidation. Except as provided in the Termination for Convenience of the Government clause, all progress payments shall be liquidated by deducting from any payment under this contract, other than advance or progress payments, the unliquidated progress payments, or 80 percent of the amount invoiced, whichever is less. The Contractor shall repay to the Government any amounts required by a retroactive price reduction, after computing liquidations and payments on past invoices at the reduced prices and adjusting the unliquidated progress payments accordingly. The Government reserves the right to unilaterally change from the ordinary liquidation rate to an alternate rate when deemed appropriate for proper contract financing.

(c) Reduction or suspension. The Contracting Officer may reduce or suspend progress payments, increase the rate of liquidation, or take a combination of these actions, after finding on substantial evidence any of the following conditions:

(1) The Contractor failed to comply with any material requirement of this contract (which includes paragraphs (f) and (g) of this clause).

(2) Performance of this contract is endangered by the Contractor's --

(i) Failure to make progress or

(ii) Unsatisfactory financial condition.

(3) Inventory allocated to this contract substantially exceeds reasonable requirements.

(4) The Contractor is delinquent in payment of the costs of performing this contract in the ordinary course of business.

(5) The fair value of the undelivered work is less than the amount of unliquidated progress payments for that work.

(6) The Contractor is realizing less profit than that reflected in the establishment of any alternate liquidation rate in paragraph (b) of this clause, and that rate is less than the progress payment rate stated in subparagraph (a)(1) of this clause.

(d) Title.

(1) Title to the property described in this paragraph (d) shall vest in the Government. Vestiture shall be immediately upon the date of this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.

(2) "Property," as used in this clause, includes all of the below-described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices.

(i) Parts, materials, inventories, and work in process;

(ii) Special tooling and special test equipment to which the Government is to acquire title;

(iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing aids, title to which would not be obtained as special tooling under paragraph (d) (2)(ii) of this clause; and

(iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the Government by other clauses of this contract.

(3) Although title to property is in the Government under this clause, other applicable clauses of this contract; e.g., the termination clauses, shall determine the handling and disposition of the property.

(4) The Contractor may sell any scrap resulting from production under this contract without requesting the Contracting Officer's approval, but the proceeds shall be credited against the costs of performance.

(5) To acquire for its own use or dispose of property to which title is vested in the Government under this clause, the Contractor must obtain the Contracting Officer's advance approval of the action and the terms. The Contractor shall (i) exclude the allocable costs of the property from the costs of contract performance, and (ii) repay to the Government any amount of unliquidated progress payments allocable to the property. Repayment may be by cash or credit memorandum.

(6) When the Contractor completes all of the obligations under this contract, including liquidation of all progress payments, title shall vest in the Contractor for all property (or the proceeds thereof) not--

(i) Delivered to, and accepted by, the Government under this contract; or

(ii) Incorporated in supplies delivered to, and accepted by, the Government under this contract and to which title is vested in the Government under this clause.

(7) The terms of this contract concerning liability for Government-furnished property shall not apply to property to which the Government acquired title solely under this clause.

(e) Risk of loss. Before delivery to and acceptance by the Government, the Contractor shall bear the risk of loss for property, the title to which vests in the Government under this clause, except to the extent the Government expressly assumes the risk. The Contractor shall repay the Government an amount equal to the unliquidated progress payments that are based on costs allocable to property that is lost (see 45.101).

(f) Control of costs and property. The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause.

(g) Reports, forms, and access to records. (1) The Contractor shall promptly furnish reports, certificates, financial statements, and other pertinent information (including estimates to complete) reasonably requested by the Contracting Officer for the administration of this clause. Also, the Contractor shall give the Government reasonable opportunity to examine and verify the Contractor's books, records, and accounts.

(2) The Contractor shall furnish estimates to complete that have been developed or updated within six months of the date of the progress payment request. The estimates to complete shall represent the Contractor's best estimate of total costs to complete all remaining contract work required under the contract. The estimates shall include sufficient detail to permit Government verification.

(3) Each Contractor request for progress payment shall:

(i) Be submitted on Standard Form 1443, Contractor's Request for Progress Payment, or the electronic equivalent as required by agency regulations, in accordance with the form instructions and the contract terms; and

(ii) Include any additional supporting documentation requested by the Contracting Officer.

(h) Special terms regarding default. If this contract is terminated under the Default clause, (i) the Contractor shall, on demand, repay to the Government the amount of unliquidated progress payments and (ii) title shall vest in the Contractor, on full liquidation of progress payments, for all property for which the Government elects not to require delivery under the Default clause. The Government shall be liable for no payment except as provided by the Default clause.

(i) Reservations of rights.

(1) No payment or vesting of title under this clause shall --

(i) Excuse the Contractor from performance of obligations under this contract or

(ii) Constitute a waiver of any of the rights or remedies of the parties under the contract.

(2) The Government's rights and remedies under this clause

(i) Shall not be exclusive but rather shall be in addition to any other rights and remedies provided by law or this contract and

(ii) Shall not be affected by delayed, partial, or omitted exercise of any right, remedy, power, or privilege, nor shall such exercise or any single exercise preclude or impair any further exercise under this clause or the exercise of any other right, power, or privilege of the Government.

(j) Financing payments to subcontractors. The financing payments to subcontractors mentioned in paragraphs (a)(1) and (a)(2) of this clause shall be all financing payments to subcontractors or divisions, if the following conditions are met:

(1) The amounts included are limited to--

- (i) The unliquidated remainder of financing payments made; plus
 - (ii) Any unpaid subcontractor requests for financing payments.
- (2) The subcontract or interdivisional order is expected to involve a minimum of approximately 6 months between the beginning of work and the first delivery; or, if the subcontractor is a small business concern, 4 months.
- (3) If the financing payments are in the form of progress payments, the terms of the subcontract or interdivisional order concerning progress payments--
- (i) Are substantially similar to the terms of this clause for any subcontractor that is a large business concern, or this clause with its Alternate I for any subcontractor that is a small business concern;
 - (ii) Are at least as favorable to the Government as the terms of this clause;
 - (iii) Are not more favorable to the subcontractor or division than the terms of this clause are to the Contractor;
 - (iv) Are in conformance with the requirements of FAR 32.504(e); and
 - (v) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--
 - (A) The Contractor defaults; or
 - (B) The subcontractor becomes bankrupt or insolvent.
- (4) If the financing payments are in the form of performance-based payments, the terms of the subcontract or interdivisional order concerning payments--
- (i) Are substantially similar to the Performance-Based Payments clause at FAR 52.232-32 and meet the criteria for, and definition of, performance-based payments in FAR Part 32;
 - (ii) Are in conformance with the requirements of FAR 32.504(f); and
 - (iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--
 - (A) The Contractor defaults; or
 - (B) The subcontractor becomes bankrupt or insolvent.
- (5) If the financing payments are in the form of commercial item financing payments, the terms of the subcontract or interdivisional order concerning payments--
- (i) Are constructed in accordance with FAR 32.206(c) and included in a subcontract for a commercial item purchase that meets the definition and standards for acquisition of commercial items in FAR Parts 2 and 12;
 - (ii) Are in conformance with the requirements of FAR 32.504(g); and
 - (iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--
 - (A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(6) If financing is in the form of progress payments, the progress payment rate in the subcontract is the customary rate used by the contracting agency, depending on whether the subcontractor is or is not a small business concern.

(7) Concerning any proceeds received by the Government for property to which title has vested in the Government under the subcontract terms, the parties agree that the proceeds shall be applied to reducing any unliquidated financing payments by the Government to the Contractor under this contract.

(8) If no unliquidated financing payments to the Contractor remain, but there are unliquidated financing payments that the Contractor has made to any subcontractor, the Contractor shall be subrogated to all the rights the Government obtained through the terms required by this clause to be in any subcontract, as if all such rights had been assigned and transferred to the Contractor.

(9) To facilitate small business participation in subcontracting under this contract, the Contractor shall provide financing payments to small business concerns, in conformity with the standards for customary contract financing payments stated in Subpart 32.113. The Contractor shall not consider the need for such financing payments as a handicap or adverse factor in the award of subcontracts.

(k) Limitations on undefinitized contract actions. Notwithstanding any other progress payment provisions in this contract, progress payments may not exceed 80 percent of costs incurred on work accomplished under undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in 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. This limitation shall apply to the costs incurred, as computed in accordance with paragraph (a) of this clause, and shall remain in effect until the contract action is definitized. Costs incurred which are subject to this limitation shall be segregated on Contractor progress payment requests and invoices from those costs eligible for higher progress payment rates. For purposes of progress payment liquidation, as described in paragraph (b) of this clause, progress payments for undefinitized contract actions shall be liquidated at 80 percent of the amount invoiced for work performed under the undefinitized contract action as long as the contract action remains undefinitized. The amount of unliquidated progress payments for undefinitized contract actions shall not exceed 80 percent of the maximum liability of the Government under the undefinitized contract action or such lower limit specified elsewhere in the contract. Separate limits may be specified for separate actions.

(l) Due date. The designated payment office will make progress payments on the 14th (Contracting Officer insert date as prescribed by agency head; if not prescribed, insert "30th") day after the designated billing office receives a proper progress payment request. In the event that the Government requires an audit or other review of a specific progress payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date. Progress payments are considered contract financing and are not subject to the interest penalty provisions of the Prompt Payment Act.

(m) Progress payments under indefinite--delivery contracts. The Contractor shall account for and submit progress payment requests under individual orders as if the order constituted a separate contract, unless otherwise specified in this contract.

(End of clause)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Certified 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 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 611 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 (e) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) The Government may issue a demand for payment to the Contractor upon finding a debt is due under the contract.

(c) Final Decisions. The Contracting Officer will issue a final decision as required by 33.211 if--

(1) The Contracting Officer and the Contractor are unable to reach agreement on the existence or amount of a debt in a timely manner;

(2) The Contractor fails to liquidate a debt previously demanded by the Contracting Officer within the timeline specified in the demand for payment unless the amounts were not repaid because the Contractor has requested an installment payment agreement; or

(3) The Contractor requests a deferment of collection on a debt previously demanded by the Contracting Officer (see 32.607-2).

(d) If a demand for payment was previously issued for the debt, the demand for payment included in the final decision shall identify the same due date as the original demand for payment.

(e) 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, including any demand for payment resulting from a default termination.

(f) The interest charge shall be computed for the actual number of calendar days involved beginning on the due date and ending on--

(1) The date on which the designated office receives payment from the Contractor;

(2) The date of issuance of a Government check to the Contractor from which an amount otherwise payable has been withheld as a credit against the contract debt; or

(3) The date on which an amount withheld and applied to the contract debt would otherwise have become payable to the Contractor.

(g) The interest charge made under this clause may be reduced under the procedures prescribed in 32.608-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (OCT 2008)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment 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 sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (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 is 14 days after the designated billing office receives a proper payment request. 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 is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request 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, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(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 is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) 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 is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(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 paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should 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., discount for prompt payment 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 notify in the event of a defective invoice.

(viii) For payments described in paragraph (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) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g.,

52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (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, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment 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 Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty 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 prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are 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. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

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

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor 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) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(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 use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) 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) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(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 paragraph (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 paragraph (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 paragraph (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 paragraph (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 paragraph (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 the Miller Act (40 U.S.C. 3133), 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 paragraph (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 paragraph (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 paragraph (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. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), 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 Government is a party. The Government 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 Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall--

(1) Remit the overpayment amount to the payment office cited in the contract along with a description of the overpayment including the--

(i) Circumstances of the overpayment (e.g., duplicate payment, erroneous payment, liquidation errors, date(s) of overpayment);

(ii) Affected contract number and delivery order number if applicable;

(iii) Affected contract line item or subline item, if applicable; and

(iv) Contractor point of contact.

(2) Provide a copy of the remittance and supporting documentation to the Contracting Officer.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(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) 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.
- (f) 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.
- (g) 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 separately in the CCR database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the Contractor, or a financial institution properly recognized under an assignment of claims pursuant to subpart 32.8, is not permitted. 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.

(h) 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.

(i) 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)

52.233-1 DISPUTES. (JUL 2002)

(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. 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. 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 Contractor shall provide the certification specified in paragraph (d)(2)(iii) of this clause when submitting any claim exceeding \$100,000.

(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 offer.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date that the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in FAR [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)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.233-4 APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM (OCT 2004)

United States law will apply to resolve any claim of breach of this contract.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least **fifteen (15)** percent of the total amount of work to be performed under the contract. This percentage may be reduced by a

supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

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.

(End of clause)

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 [insert a description of investigational methods used, such as surveys, auger borings, core borings, test pits, probings, test tunnels].

(b) Weather conditions (insert a summary of weather records and warnings).

(c) Transportation facilities (insert a summary of transportation facilities providing access from the site, including information about their availability and limitations).

(d) (insert other pertinent information).

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

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.

(End of clause)

52.243-4 CHANGES (JUN 2007)

(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 property or services; or

(4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

(1) the date, circumstances, and source of the order and

(2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

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.

(End of clause)

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)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (OCT 2010)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--
 - (i) In deliverable end item quantities only; or
 - (ii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs(c) (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:
 - (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
 - (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
 - (3) A separate, detailed cost estimate for
 - (i) the affected portions of the existing contract requirement and
 - (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.
 - (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
 - (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
 - (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
 - (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.
- (d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.
- (e) Government action.
 - (1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the

Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$65,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering-- Construction clause of contract, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract

modification implementing the VECF and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (APR 2012) - ALTERNATE I (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 49.001 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 Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(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.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(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, for the loss of the Government property.

(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.

(End of clause)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if—

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include—

(i) Acts of God or of the public enemy,

(ii) Acts of the Government in either its sovereign or contractual capacity,

(iii) Acts of another Contractor in the performance of a contract with the Government,

(iv) Fires,

(v) Floods,

(vi) Epidemics,

(vii) Quarantine restrictions,

(viii) Strikes,

(ix) Freight embargoes,

(x) Unusually severe weather, or

(xi) Delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

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:

(i) 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.

(ii) 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)

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.

(iii) 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.

(End of clause)

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)

252.203-7000 REQUIREMENTS RELATING TO COMPENSATION OF FORMER DOD OFFICIALS (SEP 2011)

(a) Definition. Covered DoD official, as used in this clause, means an individual that--

(1) Leaves or left DoD service on or after January 28, 2008; and

(2)(i) Participated personally and substantially in an acquisition as defined in 41 U.S.C. 131 with a value in excess of \$10 million, and serves or served--

(A) In an Executive Schedule position under subchapter II of chapter 53 of Title 5, United States Code;

(B) In a position in the Senior Executive Service under subchapter VIII of chapter 53 of Title 5, United States Code; or

(C) In a general or flag officer position compensated at a rate of pay for grade O-7 or above under section 201 of Title 37, United States Code; or

(ii) Serves or served in DoD in one of the following positions: Program manager, deputy program manager, procuring contracting officer, administrative contracting officer, source selection authority, member of the source selection evaluation board, or chief of a financial or technical evaluation team for a contract in an amount in excess of \$10 million.

(b) The Contractor shall not knowingly provide compensation to a covered DoD official within 2 years after the official leaves DoD service, without first determining that the official has sought and received, or has not received after 30 days of seeking, a written opinion from the appropriate DoD ethics counselor regarding the applicability of post-employment restrictions to the activities that the official is expected to undertake on behalf of the Contractor.

(c) Failure by the Contractor to comply with paragraph (b) of this clause may subject the Contractor to rescission of this contract, suspension, or debarment in accordance with 41 U.S.C. 2105(c).

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-
CONTRACT-RELATED FELONIES (DEC 2008)

(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 this contract;

(2) On the board of directors of the Contractor;

(3) As a consultant, agent, or representative for the Contractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of the Contractor with regard to this contract.

(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 the Contractor 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 301-937-1542; www.ojp.usdoj.gov/BJA/grant/DPFC.html".

(End of clause)

252.203-7002 REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (JAN 2009)

The Contractor shall inform its employees in writing of employee whistleblower rights and protections under 10 U.S.C. 2409, as described in Subpart 203.9 of the Defense Federal Acquisition Regulation Supplement.

(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)

252.204-7008 EXPORT-CONTROLLED ITEMS (APR 2010)

(a) Definition. Export-controlled items, as used in this clause, means items subject to the Export Administration Regulations (EAR) (15 CFR parts 730-774) or the International Traffic in Arms Regulations (ITAR) (22 CFR parts 120-130). The term includes:

(1) Defense items, defined in the Arms Export Control Act, 22 U.S.C. 2778(j)(4)(A), as defense articles, defense services, and related technical data, and further defined in the ITAR, 22 CFR part 120.

(2) Items, defined in the EAR as "commodities, software, and technology," terms that are also defined in the EAR, 15 CFR 772.1.

(b) The Contractor shall comply with all applicable laws and regulations regarding export-controlled items, including, but not limited to, the requirement for Contractors to register with the Department of State in accordance with the ITAR. The Contractor shall consult with the Department of State regarding any questions relating to compliance with the ITAR and shall consult with the Department of Commerce regarding any questions relating to compliance with the EAR.

(c) The Contractor's responsibility to comply with all applicable laws and regulations regarding export-controlled items exists independent of, and is not established or limited by, the information provided by this clause.

(d) Nothing in the terms of this contract adds to, changes, supersedes, or waives any of the requirements of applicable Federal laws, Executive orders, and regulations, including but not limited to--

(1) The Export Administration Act of 1979, as amended (50 U.S.C. App. 2401, et seq.);

(2) The Arms Export Control Act (22 U.S.C. 2751, et seq.);

(3) The International Emergency Economic Powers Act (50 U.S.C. 1701, et seq.);

(4) The Export Administration Regulations (15 CFR parts 730-774);

(5) The International Traffic in Arms Regulations (22 CFR parts 120-130); and

(6) Executive Order 13222, as extended.

(e) The Contractor shall include the substance of this clause, including this paragraph (e), in all subcontracts.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

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

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

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (JAN 2009)

(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 subject to this provision include: Cuba, Iran, 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)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (DEC 2006)

(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 \$30,000 with a firm, or a subsidiary of a firm, that is identified in the Excluded Parties List System 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.

(End of clause)

252.219-7009 SECTION 8(A) DIRECT AWARD (SEP 2007)

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Partnership Agreement between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA, even if not identified in Section A of this contract, is the prime contractor and retains responsibility for 8(a) certification, for 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant SBA district office is:

(To be completed by the Contracting Officer at the time of award)

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assign contract administration functions to a contract administration office.

(c) The 8(a) Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

(End of Clause)

252.223-7004 DRUG-FREE WORK FORCE (SEP 1988)

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security; health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the objectives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, and efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing--

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employee has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2.1 of subpart B of the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11, 1988), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such times as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing program shall not apply to the extent that are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

(End of clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 2012)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (FEB 2013)

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

Component means any item supplied to the Government as part of an end product or of another component.

End product means supplies delivered under a line item of this contract.

Qualifying country means a country with a reciprocal defense procurement memorandum of understanding or international agreement with the United States in which both countries agree to remove barriers to purchases of supplies produced in the other country or services performed by sources of the other country, and the memorandum or agreement complies, where applicable, with the requirements of section 36 of the Arms Export Control Act (22 U.S.C. 2776) and with 10 U.S.C. 2457. Accordingly, the following are qualifying countries:

Australia
Austria
Belgium
Canada
Czech Republic
Denmark

Egypt
Finland
France
Germany
Greece
Israel
Italy
Luxembourg
Netherlands
Norway
Poland
Portugal
Spain
Sweden
Switzerland
Turkey
United Kingdom of Great Britain and Northern Ireland.

Structural component of a tent--

(i) Means a component that contributes to the form and stability of the tent (e.g., poles, frames, flooring, guy ropes, pegs);

(ii) Does not include equipment such as heating, cooling, or lighting.

United States means the 50 States, the District of Columbia, and outlying areas.

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) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States:

(1) Food.

(2) Clothing and the materials and components thereof, other than sensors, electronics, or other items added to, and not normally associated with, clothing and the materials and components thereof. Clothing includes items such as outerwear, headwear, underwear, nightwear, footwear, hosiery, handwear, belts, badges, and insignia.

(3) (i) Tents and structural components of tents;

(ii) Tarpaulins; or

(iii) 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).

(10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items 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 incidental amounts of cotton, other natural fibers, or wool incorporated in an end product, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To waste and byproducts of cotton or wool fiber for use in the production of propellants and explosives;

(4) To foods, other than fish, shellfish, or seafood, that have been manufactured or processed in the United States, regardless of where the foods (and any component if applicable) were grown or produced. Fish, shellfish, or seafood manufactured or processed in the United States and fish, shellfish, or seafood contained in foods manufactured or processed in the United States shall be provided in accordance with paragraph (d) of this clause;

(5) To chemical warfare protective clothing produced in a qualifying country; or

(6) 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 product 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 continuous filament para-aramid yarns manufactured in a qualifying country.

(d)(1) Fish, shellfish, and seafood delivered under this contract, or contained in foods delivered under this contract--

(i) Shall be taken from the sea by U.S.-flag vessels; or

(ii) If not taken from the sea, shall be obtained from fishing within the United States; and

(2) Any processing or manufacturing of the fish, shellfish, or seafood shall be performed on a U.S.-flag vessel or in the United States.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 2005)

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

(1) Foreign person means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) United States means the 50 States, the District of Columbia, outlying areas, and the outer Continental Shelf as defined in 43 U.S.C. 1331.

(3) United States person is defined in 50 U.S.C. App. 2415(2) and means--

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) Certification. If the offeror is a foreign person, the offeror certifies, by submission of an offer, 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. 2407(a) prohibits a United States person from taking.

(End of provision)

252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES, AND NATIVE HAWAIIAN SMALL BUSINESS CONCERNS (SEP 2004)

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

Indian means--

(1) Any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c); and

(2) Any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.).

Indian organization means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. chapter 17.

Indian-owned economic enterprise means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

Indian tribe means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452(c).

Interested party means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

Native Hawaiian small business concern means an entity that is--

(1) A small business concern as defined in section 3 of the Small Business Act (15 U.S.C. 632) and relevant implementing regulations; and

(2) Owned and controlled by a Native Hawaiian as defined in 25 U.S.C. 4221(9).

(b) The Contractor shall use its best efforts to give Indian organizations, Indian-owned economic enterprises, and Native Hawaiian small business concerns the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to--

(1) For matters relating to Indian organizations or Indian-owned economic enterprises: U.S. Department of the Interior, Bureau of Indian Affairs, Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street NW, MS-2626-MIB, Washington, DC 20240-4000. The BIA will determine the eligibility and will notify the Contracting Officer.

(2) For matters relating to Native Hawaiian small business concerns: Department of Hawaiian Home Lands, PO Box 1879, Honolulu, HI 96805. The Department of Hawaiian Home Lands will determine the eligibility and will notify the Contracting Officer.

(e) No incentive payment will be made--

(1) While a challenge is pending; or

(2) If a subcontractor is determined to be an ineligible participant.

(f)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an incentive payment in accordance with this clause.

(2) The incentive amount that may be requested is 5 percent of the estimated cost, target cost, or fixed price included in the subcontract at the time of award to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(3) In the case of a subcontract for commercial items, the Contractor may receive an incentive payment only if the subcontracted items are produced or manufactured in whole or in part by an Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(4) The Contractor has the burden of proving the amount claimed and shall assert its request for an incentive payment prior to completion of contract performance.

(5) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the estimated cost, target cost, or fixed price included in the subcontract awarded to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(6) If the Contractor requests and receives an incentive payment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the incentive amount.

(g) The Contractor shall insert the substance of this clause, including this paragraph (g), in all subcontracts exceeding \$500,000.

(End of clause)

252.232-7003 ELECTRONIC SUBMISSION OF PAYMENT REQUESTS AND RECEIVING REPORTS (JUNE 2012)

(a) Definitions. As used in this clause—

(1) Contract financing payment and invoice payment have the meanings given in section 32.001 of the Federal Acquisition Regulation.

(2) Electronic form means any automated system that transmits information electronically from the initiating system to all affected systems. Facsimile, e-mail, and scanned documents are not acceptable electronic forms for submission of payment requests. However, scanned documents are acceptable when they are part of a submission of a payment request made using Wide Area WorkFlow (WAWF) or another electronic form authorized by the Contracting Officer.

(3) Payment request means any request for contract financing payment or invoice payment submitted by the Contractor under this contract.

(4) Receiving report means the data required by the clause at 252.246-7000, Material Inspection and Receiving Report.

(b) Except as provided in paragraph (c) of this clause, the Contractor shall submit payment requests and receiving reports using WAWF, in one of the following electronic formats that WAWF accepts: Electronic Data Interchange, Secure File Transfer Protocol, or World Wide Web input. Information regarding WAWF is available on the Internet at <https://wawf.eb.mil/>.

(c) The Contractor may submit a payment request and receiving report using other than WAWF only when—

(1) The Contracting Officer administering the contract for payment has determined, in writing, that electronic submission would be unduly burdensome to the Contractor. In such cases, the Contractor shall include a copy of the Contracting Officer's determination with each request for payment;

(2) DoD makes payment for commercial transportation services provided under a Government rate tender or a contract for transportation services using a DoD-approved electronic third party payment system or other exempted vendor payment/invoicing system (e.g., PowerTrack, Transportation Financial Management System, and Cargo and Billing System);

(3) DoD makes payment for rendered health care services using the TRICARE Encounter Data System (TEDS) as the electronic format; or

(4) When the Governmentwide commercial purchase card is used as the method of payment, only submission of the receiving report in electronic form is required.

(d) The Contractor shall submit any non-electronic payment requests using the method or methods specified in Section G of the contract.

(e) In addition to the requirements of this clause, the Contractor shall meet the requirements of the appropriate payment clauses in this contract when submitting payments requests.

(End of clause)

252.232-7010 LEVIES ON CONTRACT PAYMENTS (DEC 2006)

(a) 26 U.S.C. 6331(h) authorizes the Internal Revenue Service (IRS) to continuously levy up to 100 percent of contract payments, up to the amount of tax debt.

(b) When a levy is imposed on a payment under this contract and the Contractor believes that the levy may result in an inability to perform the contract, the Contractor shall promptly notify the Procuring Contracting Officer in writing, with a copy to the Administrative Contracting Officer, and shall provide--

(1) The total dollar amount of the levy;

(2) A statement that the Contractor believes that the levy may result in an inability to perform the contract, including rationale and adequate supporting documentation; and

(3) Advice as to whether the inability to perform may adversely affect national security, including rationale and adequate supporting documentation.

(c) DoD shall promptly review the Contractor's assessment, and the Procuring Contracting Officer shall provide a written notification to the Contractor including--

(1) A statement as to whether DoD agrees that the levy may result in an inability to perform the contract; and

(2)(i) If the levy may result in an inability to perform the contract and the lack of performance will adversely affect national security, the total amount of the monies collected that should be returned to the Contractor; or

(ii) If the levy may result in an inability to perform the contract but will not impact national security, a recommendation that the Contractor promptly notify the IRS to attempt to resolve the tax situation.

(d) Any DoD determination under this clause is not subject to appeal under the Contract Disputes Act.

(End of clause)

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 AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

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

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

Title	File	Drawing No.
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INDEX OF DRAWINGS		G-002
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(End of clause)

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 (DEC 2012)

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

(2) Data other than certified 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 certified 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.

Section 00800 - Special Contract Requirements

WAGE DETERMINATION

General Decision Number: MO130001 05/17/2013 MO1

Superseded General Decision Number: MO20120001

State: Missouri

Construction Types: Heavy and Highway

Counties: Missouri Statewide.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/08/2013
2	03/29/2013
3	04/05/2013
4	05/17/2013

CARP0002-002 05/01/2010

ST. LOUIS COUNTY AND CITY

	Rates	Fringes
Carpenters.....	\$ 32.78	12.25

CARP0005-006 04/01/2008

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

	Rates	Fringes
Carpenters:		
CARPENTERS & LATHERS.....	\$ 33.00	12.03
MILLWRIGHTS & PILEDRIVERS...	\$ 33.00	12.03

CARP0011-001 05/01/2011

	Rates	Fringes
Carpenter and Piledriver		
ADAIR, AUDRAIN (West of Hwy 19), BOONE, CALLAWAY, CHARITON, COLE, COOPER, HOWARD, KNOX, LINN, MACON, MILLER, MONITEAU, MONROE, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SHELBY AND		

SULLIVAN COUNTIES.....	\$ 28.57	11.00
ATCHISON, ANDREW, BATES, CALDWELL, CARROLL, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HENRY, HOLT, LIVINGSTON, MERCER, NODAWAY, ST. CLAIR, SALINE AND WORTH COUNTIES.....	\$ 27.67	10.55
AUDRAIN (East of Hwy.19), RALLS, MARION, LEWIS, CLARK AND SCOTLAND COUNTIES.	\$ 28.83	13.05
BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES.	\$ 27.32	10.55
BENTON, MORGAN AND PETTIS...	\$ 27.27	11.00
BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY, STE. GENEVIEVE, SCOTT, STODDARD AND WAYNE COUNTIES.....	\$ 28.67	13.07
BUCHANAN, CLINTON, JOHNSON AND LAFAYETTE COUNTIES.....	\$ 28.32	10.55
CARTER, HOWELL, OREGON AND RIPLEY COUNTIES.....	\$ 27.75	13.07
CRAWFORD, DENT, GASCONADE, IRON, MADISON, MARIES, MONTGOMERY, PHELPS, PULASKI, REYNOLDS, SHANNON AND TEXAS COUNTIES.....	\$ 28.68	13.05
FRANKLIN COUNTY.....	\$ 31.23	13.05
JEFFERSON AND ST. CHARLES COUNTIES.....	\$ 33.38	13.05
LINCOLN COUNTY.....	\$ 30.34	13.05
PIKE, ST. FRANCOIS AND WASHINGTON COUNTIES.....	\$ 29.39	13.05
WARREN COUNTY.....	\$ 30.73	13.05

ELEC0001-002 06/01/2012

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

Rates Fringes

Electricians..... \$ 31.75 22.37

 * ELEC0002-001 09/01/2012

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

	Rates	Fringes
Line Construction:		
Equipment Operator.....	\$ 33.59	36.5%+5.00
Groundman & Truck Driver....	\$ 25.97	36.5%+5.00
Lineman & Cable Splicer.....	\$ 38.91	36.5%+5.00

 ELEC0053-004 09/02/2012

	Rates	Fringes
Line Construction: (ANDREW, ATCHINSON, BARRY, BARTON, BUCHANAN, CALDWELL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIES., DEKALB, DOUGLAS, GENTRY, GREENE, GRUNDY, HARRISON, HICKORY, HOLT, JASPER, LACLEDE, LAWRENCE, LIVINGSTON, MCDONALD, MERCER, NEWTON, NODAWAY, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, WORTH AND WRIGHT COUNTIES)		
Groundman Powderman.....	\$ 25.88	13.93
Groundman.....	\$ 24.46	29.5%+6.22
Lineman Operator.....	\$ 35.82	29.5%+6.79
Lineman.....	\$ 37.84	29.5%+6.89

Line Construction; (BATES, BENTON, CARROLL, CASS, CLAY, HENRY, JACKSON, JOHNSON, LAFAYETTE, PETTIS, PLATTE, RAY AND SALINE COUNTIES)		
Groundman Powderman.....	\$ 26.84	14.26
Groundman.....	\$ 25.95	29.5%+6.30
Lineman Operator.....	\$ 36.54	29.5%+6.83
Lineman.....	\$ 39.17	29.5%+6.96

ELEC0095-001 06/01/2012

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

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 24.90	8%+10.91
Electricians.....	\$ 24.55	8%+10.91

ELEC0124-007 09/01/2012

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

	Rates	Fringes
Electricians.....	\$ 34.83	18.73

ELEC0257-003 03/01/2012

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

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 30.42	16.085
Electricians.....	\$ 30.42	16.085

ELEC0350-002 12/01/2012

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

	Rates	Fringes
Electricians.....	\$ 29.00	15.50

ELEC0453-001 09/01/2012

	Rates	Fringes
Electricians:		
CHRISITAN, DALLAS,		
DOUGLAS, GREENE, HICKORY,		

HOWELL, LACLEDE, OREGON, OZARK, POLK, SHANNON, WEBSTER and WRIGHT COUNTIES.	\$ 24.00	14.00
PULASKI and TEXAS COUNTIES..	\$ 28.65	14.47
STONE and TANEY COUNTIES....	\$ 19.79	13.18

ELEC0545-003 06/01/2011

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

	Rates	Fringes
Electricians:.....	\$ 31.00	12.22

ELEC0702-004 07/02/2012

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

	Rates	Fringes
Line Construction:		
Groundman - Class A.....	\$ 24.64	31%+5.76
Groundman-Equipment Operator Class II (all other equipment).....	\$ 31.20	31%+5.76
Heavy-Equipment Operator Class I (all crawler type equipment D-4 and larger).	\$ 35.57	31%+5.76
Lineman.....	\$ 43.30	31%+5.76

ENGI0101-001 05/01/2012

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

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 30.74	14.21
GROUP 2.....	\$ 30.34	14.21
GROUP 3.....	\$ 28.34	14.21

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

GROUP 3: (a) Oiler;
 (b) Oiler driver
 (c) Mechanic.

HOURLY PREMIUMS:

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

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

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.75) ABOVE GROUP 1 RATE: Crane rigs, or piledrivers 200 ft. of boom or over (including jib.)

ENGI0101-005 04/01/2013

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 33.88	14.83
GROUP 2.....	\$ 32.84	14.83
GROUP 3.....	\$ 31.72	14.83
GROUP 4.....	\$ 30.97	14.83

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

GROUP 2: "A" Frame truck operator; back filler operator; boilers (1); chip spreader; churn drill operator; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator;

form grader operator; hoisting engine (1 drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra- hammer (or similar type); power shield; paymill operator; pumps; siphons and jets; stump cutting machine; tank car heater operator (combination boiler and booster); compressor; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; straw blower; tank car heater operator (combination boiler and booster); vibrating machine operator (not hand held)

GROUP 3: Oilers

GROUP 4: Oiler Driver (All Types)

FOOTNOTE:

HOURLY PREMIUMS FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$1.00) ABOVE GROUP 1 RATE:

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

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

Shovels & backhoes, 3 yd. capacity or over.

 ENGI0101-022 05/01/2012

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

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 27.51	12.26
GROUP 2.....	\$ 27.16	12.26
GROUP 3.....	\$ 26.69	12.26
GROUP 4.....	\$ 24.91	12.26

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

off-road trucks; piledriver operator; pitman crane operator; push cat operator; quad trac; scoop operator - all types; shovel operator; sideboom cats; skimmer scoop operators; trenching machine operator; truck crane.

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

GROUP 3: Boilers - 1; chip spreader (front man); churn drill operator; clef plane operator; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; roller operator, other than high type asphalt; screening & washing plant operator; siphons & jets; sub-grading machine operator; spreader box operator, self-propelled (not asphalt); tank car heater operator (combination boiler & booster); tractor operator (50 h.p. or less); Ulmac, Ulric or similar spreader; vibrating machine operator, not hand;

GROUP 4: Grade checker; Oiler; Oiler-Driver

HOURLY PREMIUMS:

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

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

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

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

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

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

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

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 29.61	22.53
GROUP 2.....	\$ 29.61	22.53
GROUP 3.....	\$ 27.71	22.53
GROUP 4.....	\$ 24.25	22.53

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, Cable; Backhoe, Hydraulic (2 cu yds bucket and under regardless of attachment, one oiler for 2 or 3, two oilers for 4 through 6); Backhoe, Hydraulic over 2 cu yds; Cableway; Crane, Crawler or Truck; Crane, Hydraulic - Truck or Cruiser mounted, 16 tons and over; Crane, Locomotive; crane with boom including jib over 100 ft from pin to pin; Crane using rock socket tool; Derrick, Steam; Derrick Car and Derrick Boat; Dragline, 7 cu yds and over; Dredge; Gradall, Crawler or tire mounted; Locomotive, Gas, Steam & other powers; Pile Driver, Land or Floating; Scoop, Skimmer; Shovel, Power (Electric, Gas, Steam or other powers); Shovel, Power (7 cu yds and over); Switch Boat; Whirley; Air Tugger with air compressor; Anchor Placing Barge; Asphalt Spreader; Athey Force Feeder Loader, self-propelled; Backfilling Machine; Boat Operator - Push Boat or Tow Boat (job site); Boiler, High Pressure Breaking in Period; Boom Truck, Placing or Erecting; Boring Machine, Footing Foundation; Bullfloat; Cherry Picker; Combination Concrete Hoist and Mixer (such as Mixermobile); Compressor, Two 125 CFM and under; Compressor, Two through Four over 125 CFM; Compressor when operator runs throttle; Concrete Breaker (Truck or Tractor mounted); Concrete Pump (such as Pumpcrete machine); Concrete Saw (self-propelled); Concrete Spreader; Conveyor, Large (not selfpropelled) hoisting or moving brick and concrete into, or into and on floor level, one or both; Crane, Cimbing (such as Linden); Crane, Hydraulic - Rough Terrain, self-propelled; Crane, Hydraulic - Truck or Cruiser mounted - under 16 tons; Drilling machine - Self-powered, used for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other souces including concrete breakers, jackhammers and Barco equipmnet no engineer required); Elevating Grader; Engine Man, Dredge; Excavator or Powerbelt Machine; Finishing Machine, self- propelled oscillating screed; Forklift; Generators, Two through Six 30 KW or over; Grader, Road with power blade; Greaser; Highlift; Hoist, Concrete and Brick (Brick cages or concrete skips operating or on tower, Towermobile, or similar equipment); Hoist, Three or more drums in use; Hoist, Stack; Hydro-Hammer; Lad-A-Vator, hoisting brick or concrete; Loading Machine such as Barber-Greene; Mechanic on job site

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

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

GROUP 4: Crane type

HOURLY PREMIUMS:

Backhoe, Hydraulic 2 cu yds or less without oiler -	\$2.00;
Crane,climbing (such as Linden) -	\$.50;
Crane, Pile Driving and Extracting -	\$.50
Crane with boom (including job) over 100 ft from pin to pin - add \$.01 per foot to maximum of	\$4.00;
Crane, using rock socket tool -	\$.50;
Derrick, diesel, gas or electric hoisting material and erecting steel (150 ft or more above ground) -	\$.50;
Dragline, 7 cu yds and over -	\$.50;
Hoist, Three or more drums in use -	\$.50;
Scoop, Tandem -	\$.50;
Shovel, Power - 7 cu yds and over -	\$.50;
Tractor, Tandem Crawler -	\$.50;
Tunnel, man assigned to work in tunnel or tunnel shaft -	\$.50;
Wrecking, when machines are working on second floor or higher -	\$.50

ENGI0513-006 05/01/2012

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

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 25.24	22.50
GROUP 2.....	\$ 24.89	22.50
GROUP 3.....	\$ 24.69	22.50
GROUP 4.....	\$ 21.04	22.50

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

GROUP 3: Spreader box operator, self-propelled not asphalt; tractor operator (50 h.p. or less); boilers one; chip spreader (front man); churn drill operator; compressor over

105 CFM 2-3 pumps 4" & over; 2-3 light plant 7.5 KWA or any combination thereof; clef plane operator; compressor maintenance operator 2 or 3; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; riller operator other than high type asphalt; screening & washing plant operator; siphons & jets; subgrading machine operator; tank car heater (combination boiler & booster); ulmac, ulric or similar spreader; vibrating machine operator; hydrobroom.

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

FOOTNOTE: HOURLY PREMIUMS

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

ENGI0513-007 05/02/2012

ST. LOUIS CITY AND COUNTY

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 29.61	22.53
GROUP 2.....	\$ 29.61	22.53
GROUP 3.....	\$ 27.71	22.53
GROUP 4.....	\$ 24.25	22.53

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

GROUP 3: Conveyor, large (not self-propelled); conveyor, large (not self-propelled) moving brick and concrete distributing on floor level; mixer two or more mixers of one bag capacity or less; air tugger w/plant air; boiler, for power or heating on construction projects; boiler, temporary; compressor (mounted on truck; curb finishing machine; ditch paving machine; elevator; endless chain hoist; form grader; hoist, one drum regardless of size;

lad-a-vator; manlift; mixer, asphalt, over 8 cu. ft. capacity, without side loader, 2 bag capacity or more; mixer, with side loader, regardless of size; pug mill operator; pump, sump-self-powered, automatic controlled over 2" during use in connection with construction work; sweeper, street; welding machine, one over 400 amp.; winch operating from truck; scissor lift (used for hoisting); tractor, small wheel type 50 h.p. & under with grader blade & similar equipment; Oiler on dredge and on truck crane.

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

HOURLY PREMIUMS:

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

IRON0010-012 04/01/2012

Rates Fringes

Ironworkers:

ANDREW, ATCHISON, BARTON,
BATES, BENTON, CALDWELL,
CAMDEN, CARROLL, CEDAR,
CHARITON, CHRISTIAN,
CLINTON, COOPER, DADE,
DALLAS, DAVIESS, DE KALB,
GENTRY, GREENE, GRUNDY,
HARRISON, HENRY, HICKORY,
HOLT, HOWARD, LACLEDE,
LINN, LIVINGSTON, MERCER,
MONITEAU, MORGAN, NODAWAY,
PETTIS, POLK, PUTNAM,

RANDLOPH, ST. CLAIR, SALINE, SULLIVAN, TANEY, VERNON, WEBSTER, WRIGHT and WORTH Counties and portions of ADAIR, BOONE, MACON, MILLER and RANDOLPH Counties.....	.	\$ 26.00	25.60
BUCHANAN, CASS, CLAY, JACKSON, JOHNSON, LAFAYETTE, PLATTE AND RAY Counties.....	\$ 29.00		25.60

IRON0321-002 08/01/2009

DOUGLAS, HOWELL and OZARK COUNTIES

	Rates	Fringes
Ironworker.....	\$ 18.10	12.34

* IRON0396-004 08/01/2012

ST. LOUIS (City and County), ST. CHARLES, JEFFERSON, IRON,
FRANKLIN, LINCOLN, WARREN, WASHINGTON, ST. FRANCOIS, STE.
GENEVIEVE, and REYNOLDS Counties; and portions of MADISON,
PERRY, BOLLINGER, WAYNE, and CARTER Counties

	Rates	Fringes
Ironworker.....	\$ 32.28	20.31

* IRON0396-009 08/01/2012

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

	Rates	Fringes
Ironworker.....	\$ 27.81	20.31

IRON0577-005 08/01/2012

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

	Rates	Fringes
Ironworker.....	\$ 24.44	17.31

IRON0584-004 06/01/2012

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

	Rates	Fringes
Ironworkers:.....	\$ 22.70	12.28

IRON0782-003 05/01/2012

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

	Rates	Fringes
Ironworkers:		
Locks, Dams, Bridges and other major work on the Mississippi and Ohio River only.....	\$ 29.39	20.03
All Other Work.....	\$ 23.87	17.79

LABO0042-003 03/06/2013

ST. LOUIS (City and County)

	Rates	Fringes
LABORER		
Plumber Laborer.....	\$ 29.52	13.22

LABO0042-005 03/08/2013

ST. LOUIS (City and County)

	Rates	Fringes
LABORER		
Dynamiter, Powderman.....	\$ 29.90	13.22
Laborers, Flaggers.....	\$ 29.52	13.22
Wrecking.....	\$ 29.40	13.22

LABO0424-002 05/01/2009

	Rates	Fringes
LABORER		
ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, CLARK, COLE, COOPER, HOWARD,		

IRON, KNOX, LEWIS, LINN, MACON, MADISON, MARION, MILLER, MONITEAU, MONROE, PERRY, PIKE, PUTNAM, RALLS, RANDOLPH, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES		
GROUP 1.....	\$ 24.56	9.29
GROUP 2.....	\$ 25.16	9.29
BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWELL, MARIES, MISSISSIPPI, NEW MADRID, OREGON, OSAGE, PEMISCOT, PHELPS, PULASKI, RIPLEY, SCOTT, SHANNON, STODDARD, TEXAS, WASHINGTON AND WAYNE COUNTIES		
GROUP 1.....	\$ 24.56	9.29
GROUP 2.....	\$ 25.16	9.29
FRANKLIN COUNTY		
GROUP 1.....	\$ 26.01	9.29
GROUP 2.....	\$ 26.61	9.29
JEFFERSON COUNTY		
GROUP 1.....	\$ 26.06	9.29
GROUP 2.....	\$ 26.66	9.29
LINCOLN, MONTGOMERY AND WARREN COUNTIES		
GROUP 1.....	\$ 24.81	9.29
GROUP 2.....	\$ 25.41	9.29
ST.CHARLES COUNTY		
GROUP 1.....	\$ 27.33	9.29
GROUP 2.....	\$ 27.33	9.29

LABORERS CLASSIFICATIONS

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

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

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

 * LABO0579-005 05/01/2013

	Rates	Fringes
LABORER (ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HOLT, LIVINGSTON, MERCER, NODAWAY and WORTH COUNTIES.)		
GROUP 1.....	\$ 24.42	11.71
GROUP 2.....	\$ 24.77	11.71
LABORER (BARRY, BARTON, BATES, BENTON, CAMDEN, CARROLL, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HENRY, HICKORY, JASPER, JOHNSON, LACLEDE, LAWRENCE, MCDONALD, MORGAN, NEWTON, OZARK, PETTIS, POLK, ST.CLAIR, SALINE, STONE, TANEY, VERNON, WEBSTER and WRIGHT COUNTIES)		

GROUP 1.....	\$ 22.77	11.56
GROUP 2.....	\$ 23.32	11.56
LABORER (LAFAYETTE COUNTY)		
GROUP 1.....	\$ 24.32	11.81
GROUP 2.....	\$ 24.67	11.81

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers - Carpenter tenders; salamander tenders; loading trucks under bins; hoppers & conveyors; track men & all other general laborers; air tool operator; cement handler-bulk or sack; dump man on earth fill; georgie buggy man; material batch hopper man; material mixer man (except on manholes); coffer dams; riprap pavers - rock, block or brick; signal man; scaffolds over ten feet not self-supported from ground up; skipman on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator, all work in connection with hydraulic or general dredging operations; puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material or materials (where special protection is required); rubbing concrete; topper of standing trees; batter board man on pipe and ditch work; feeder man on wood pulverizers; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 feet where compressed air is not used; abutment and pier hole men working six (6) feet or more below ground; men working in coffer dams for bridge piers and footings in the river; ditchliners; pressure groutmen; caulker; chain or concrete saw; cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground; mortarmen on brick or block manholes; toxic and hazardous waste work.

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

LABO0663-002 04/01/2011

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 26.64	12.49
GROUP 2.....	\$ 27.85	12.49

LABORERS CLASSIFICATIONS

GROUP 1: General laborers, Carpenter tenders, salamander tenders, loading trucks under bins, hoppers and conveyors, track men and all other general laborers, air tool operator, cement handler (bulk or sack), chain or concrete saw, deck hands, dump man on earth fill, Georgie Buggies man, material batch hopper man, scale man, material mixer man (except on manholes), coffer dams, abutments and pier hole men working below ground, riprap pavers rock, black or brick, signal man, scaffolds over ten feet not self-supported from ground up, skipman on concrete paving, wire mesh setters on concrete paving, all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipelines, power tool operator, all work in connection with hydraulic or general dredging operations, straw blower nozzleman, asphalt plant platform man, chuck tender, crusher feeder, men handling creosote ties on creosote materials, men working with and handling epoxy material or materials (where special protection is required), topper of standing trees, batter board man on pipe and ditch work, feeder man on wood pulverizers, board and willow mat weavers and cable tiers on river work, deck hands, pile dike and revetment work, all laborers working on underground tunnels less than 25 feet where compressed air is not used, abutment and pier hole men working six (6) feet or more below ground, men working in coffer dams for bridge piers and footings in the river, ditchliners, pressure groutmen, caulker and chain or concrete saw, cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground, mortarmen on brick or block manholes, signal man.

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

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

	Rates	Fringes
Painters:		
Brush and Roller; Taper.....	\$ 28.61	10.24
High work over 60 feet.....	\$ 29.11	10.24
Lead Abatement.....	\$ 29.36	10.24
Pressure Roller; High work under 60 ft.....	\$ 28.86	10.24
Spray & Abrasive Blasting; Water Blasting (Over 5000 PSI).....	\$ 30.61	10.24
Taper (Ames Tools & Bazooka).....	\$ 30.21	10.24

 PAIN0002-006 04/01/2011

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

	Rates	Fringes
Painters:		
Bridges, Dams, Locks or Powerhouses.....	\$ 22.80	10.87
Brush and Roll; Taping, Paperhanging.....	\$ 20.80	10.87
Epoxy or Any Two Part Coating; Sandblasting; Stage or other Aerial Work - Platforms over 50 feet high; Lead Abatement.....	\$ 21.80	10.87
Spray; Structural Steel (over 50 feet).....	\$ 21.30	10.87
Tapers using Ames or Comparable Tools.....	\$ 21.05	10.87

 PAIN0003-004 04/01/2011

CASS, CLAY, CLINTON, JACKSON, JOHNSON, LAFAYETTE, PLATTE & RAY COUNTIES

Rates Fringes

Painters:

Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks.....		\$ 29.93	14.04
Brush & Roller.....	\$ 28.31	14.04	
Drywall.....		\$ 28.53	14.04
Paper Hanger.....	\$ 28.81	14.04	
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping...	\$ 29.43	14.04	
Steeplejack.....	\$ 33.50	14.04	

PAIN0003-011 04/01/2011

BATES, BENTON, CALDWELL, CARROLL, COOPER, DAVIESS, GRUNDY,
HARRISON, HENRY, LIVINGSTON, MERCER, MONITEAU, MORGAN, PETTIS &
SALINE COUNTIES

Rates Fringes

Painters:

Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks.....		\$ 24.06	14.04
Brush & Roller.....	\$ 22.67	14.04	
Drywall.....		\$ 22.84	14.04
Paper Hanger.....	\$ 23.07	14.04	
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping...	\$ 23.56	14.04	
Steeplejack.....	\$ 26.82	14.04	

PAIN0098-002 05/01/2012

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

Rates Fringes

Painters:

Brush & Roller.....	\$ 22.93	11.51	
Sandblaster.....	\$ 23.93	11.51	
Steeplejack.....	\$ 25.93	11.51	

PAIN0203-001 04/01/2012

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

	Rates	Fringes
Painters:		
Finisher.....	\$ 20.18	11.33
Painter.....	\$ 19.75	11.76
Sandblaster, High Man, Spray Man, Vinyl Hanger, Tool Operator.....	\$ 21.18	11.33

PAIN1265-003 07/01/2012

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

	Rates	Fringes
Painters:		
Brush and Roller.....	\$ 25.64	11.77
Floor Work.....	\$ 26.14	11.77
Lead Abatement.....	\$ 27.89	11.77
Spray.....	\$ 27.14	11.77
Structural Steel, Sandblasting and All Tank Work.....	\$ 26.89	11.77
Taping, Paperhanging.....	\$ 26.64	11.77

PAIN1292-002 09/01/2012

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

	Rates	Fringes
Painters:		
Bridges, Stacks & Tanks.....	\$ 28.79	11.50
Brush & Roller.....	\$ 23.84	11.50
Spray & Abrasive Blasting; Waterblasting (over 5000 PSI).....	\$ 26.44	11.50

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

PAIN1292-003 09/01/2012

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

	Rates	Fringes
Painters:		
Bridges, Stacks & Tanks.....	\$ 28.79	11.50
Brush & Roller.....	\$ 26.44	11.50
Spray & Abrasive Blasting; Waterblasting (Over 5000 PSI).....	\$ 26.44	11.50

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

PLAS0518-006 03/01/2013

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

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 22.40	9.05

PLAS0518-007 04/01/2012

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

	Rates	Fringes
Cement Masons:.....	\$ 29.24	14.38

PLAS0518-011 04/01/2012

ANDREW, ATCHISON, BATES, BUCHANNAN, CLINTON, DEKALB, GENTRY,
HENRY, HOLT, JOHNSON, LAFAYETTE, NODAWAY & WORTH COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.08	16.15

PLAS0527-001 04/04/2012

Rates Fringes

CEMENT MASON FRANKLIN, LINCOLN AND WARREN COUNTIES.....	\$ 28.33	14.83
JEFFERSON, ST. CHARLES COUNTIES AND ST. LOUIS (City and County).....	\$ 29.50	14.91

PLAS0527-004 06/01/2012

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

	Rates	Fringes
CEMENT MASON.....	\$ 26.34	14.83

PLAS0908-001 05/01/2012

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

	Rates	Fringes
CEMENT MASON.....	\$ 25.25	12.55

PLAS0908-005 05/01/2012

BENTON, CALDWELL, CALLAWAY, CAMDEN, CARROLL, COLE, DAVIESS,
GASCONADE, GRUNDY, HARRISON, LIVINGSTON, MACON, MARIES, MERCER,
MILLER, MONTGOMERY, MORGAN, OSAGE, PETTIS & SALINE COUNTIES

	Rates	Fringes
CEMENT MASON.....	\$ 25.25	12.55

PLUM0008-003 06/01/2012

CASS, CLAY, JACKSON, JOHNSON, AND PLATTE COUNTIES

	Rates	Fringes
Plumbers.....	\$ 37.45	20.41

PLUM0008-017 06/01/2012

BATES, BENTON, CARROLL, HENRY, LAFAYETTE, MORGAN, PETTIS, RAY,
ST. CLAIR, SALINE AND VERNON COUNTIES

	Rates	Fringes
Plumbers.....	\$ 35.01	20.41

PLUM0045-003 09/01/2012

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

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 33.10	18.65

PLUM0178-003 11/01/2012

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

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 27.35	14.32

PLUM0178-006 11/01/2012

BARTON, JASPER, MCDONALD AND NEWTON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters		
Projects \$750,000 & under...	\$ 24.38	14.32
Projects over \$750,000.....	\$ 27.35	14.32

PLUM0533-004 06/01/2012

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

	Rates	Fringes
Pipefitters.....	\$ 40.08	19.07

PLUM0562-004 08/01/2012

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAMDEN, CAPE
GIRARDEAU, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD,
DENT, DUNKLIN, FRANKLIN, GASCONADE, GRUNDY, HOWARD, HOWELL,
IRON, JEFFERSON, KNOX, LEWIS, LINCOLN, LINN, LIVINGSTON, MACON,
MADISON, MARIES, MARION, MERCER, MILLER, MISSISSIPPI, MONITEAU,

MONROE, MONTGOMERY, NEW MADRID, OREGON, OSAGE, PEMISCOTT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST.FRANCOIS, STE. GENEVIEVE, ST. LOUIS, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WARREN, WASHINGTON,AND WAYNE COUNTIES.

	Rates	Fringes
Plumbers and Pipefitters		
Mechanical Contracts including all piping and temperature control work \$7.0 million & under.....	\$ 32.91	19.16
Mechanical Contracts including all piping and temperature control work over \$7.0 million.....	\$ 34.25	25.03

 PLUM0562-016 08/01/2012

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

	Rates	Fringes
Plumbers		
Mechanical Contracts including all piping and temperature control work \$7.0 million & under.....	\$ 32.91	19.16
Mechanical Contracts including all piping and temperature control work over \$7.0 million.....	\$ 34.25	25.03

 TEAM0013-001 05/01/2010

	Rates	Fringes
Truck drivers (ADAIR, BUTLER, CLARK, DUNKIN, HOWELL, KNOX, LEWIS, OREGON, PUTNAM, RIPLEY, SCHUYLER AND SCOTLAND COUNTIES)		
GROUP 1.....	\$ 25.84	9.85
GROUP 2.....	\$ 26.00	9.85
GROUP 3.....	\$ 25.99	9.85
GROUP 4.....	\$ 26.11	9.85

Truck drivers (AUDRAIN, BOLLINGER, BOONE, CALLAWAY, CAPE GIRARDEAU, CARTER, COLE,

CRAWFORD, DENT, GASCONADE,
IRON, MACON, MADISON, MARIES,
MARION, MILLER, MISSISSIPPI,
MONROE, MONTGOMERY, NEW
MADRID, OSAGE, PEMISCOT,
PERRY, PHELPS, PIKE, PULASKI,
RALLS, REYNOLDS, ST.
FRANCOIS, STE. GENEVIEVE,
SCOTT, SHANNON, SHELBY,
STODDARD, TEXAS, WASHINGTON
AND WAYNE COUNTIES)

GROUP 1.....	\$ 26.57	9.85
GROUP 2.....	\$ 26.73	9.85
GROUP 3.....	\$ 26.72	9.85
GROUP 4.....	\$ 26.84	9.85

Truck drivers (FRANKLIN,
JEFFERSON and ST. CHARLES
COUNTIES)

GROUP 1.....	\$ 28.93	9.85
GROUP 2.....	\$ 29.04	9.85
GROUP 3.....	\$ 29.08	9.85
GROUP 4.....	\$ 29.15	9.85

Truck drivers (LINCOLN and
WARREN COUNTIES)

GROUP 1.....	\$ 27.58	9.85
GROUP 2.....	\$ 27.69	9.85
GROUP 3.....	\$ 28.73	9.85
GROUP 4.....	\$ 27.80	9.85

TRUCK DRIVERS CLASSIFICATIONS:

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

GROUP 2: Agitator and Transit Mix Trucks

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

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

TEAM0056-001 05/01/2010

Rates Fringes

Truck drivers (ANDREW,
BARTON, BATES, BENTON,
CALDWELL, CAMDEN, CARROLL,

CEDAR, CHARITON, CHRISTIAN,
 CLINTON, COOPER, DADE,
 DALLAS, DAVIESS, DEKALB,
 DOUGLAS, GREENE, HENRY,
 HICKORY, HOWARD, JASPER,
 LACLEDE, LAWRENCE, LINN,
 LIVINGSTON, MONITEAU, MORGAN,
 NEWTON, PETTIS, POLK,
 RANDOLPH, ST. CLAIR, SALINE,
 VERNON, WEBSTER AND WRIGHT
 COUNTIES)

GROUP 1.....	\$ 26.27	9.85
GROUP 2.....	\$ 26.43	9.85
GROUP 3.....	\$ 26.42	9.85
GROUP 4.....	\$ 26.54	9.85

Truck drivers: (ATCHISON,
 BARRY, GENTRY, GRUNDY,
 HARRISON, HOLT, MCDONALD,
 MERCER, NODAWAY, OZARK,
 STONE, SULLIVAN, TANEY AND
 WORTH COUNTIES)

GROUP 1.....	\$ 25.54	9.85
GROUP 2.....	\$ 25.70	9.85
GROUP 3.....	\$ 25.69	9.85
GROUP 4.....	\$ 25.81	9.85

Truck drivers; (BUCHANAN,
 JOHNSON AND LAFAYETTE
 COUNTIES)

GROUP 1.....	\$ 27.48	9.85
GROUP 2.....	\$ 27.59	9.85
GROUP 3.....	\$ 27.63	9.85
GROUP 4.....	\$ 27.70	9.85

TRUCK DRIVER CLASSIFICATIONS

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

GROUP 2: Agitator and transit mix-trucks.

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

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

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BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DALLAS, DENT, DOUGLAS,

GREENE, HICKORY, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, MILLER, NEWTON, OZARK, PHELPS, POLK, PULASKI, SHANNON, STONE, TANEY, TEXAS, VERNON, WEBSTER AND WRIGHT COUNTIES

	Rates	Fringes
Truck drivers:		
Traffic Control Service Driver.....	\$ 20.45	0.00

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

TEAM0541-001 04/01/2011

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 29.76	11.65
GROUP 2.....	\$ 29.19	11.65
GROUP 3.....	\$ 28.67	11.65

TRUCK DRIVERS CLASSIFICATIONS

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

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

GROUP 3: Oilers and Greasers - Field

TEAM0682-002 05/01/2012

ST LOUIS CITY AND COUNTY

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 30.605	8.69+a+b+c+d
GROUP 2.....	\$ 30.805	8.69+a+b+c+d
GROUP 3.....	\$ 30.69	8.69+a+b+c+d

a. PENSION: 5/1/2012 - \$182.20 per week.

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

TRUCK DRIVERS CLASSIFICATIONS

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

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

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

FOOTNOTE FOR TRUCK DRIVERS:

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

d. PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of service in any one contract year. When such an employee has completed 3 years of continuous employment with the same employer and then works the above required number of hours, he shall receive double the number of days of vacation specified above. When such an employee has completed 10 years of continuous employment with the same employer and then works the above required number of hours, he shall receive triple the number of days of vacation specified above. When such an employee has completed 15 years of continuous employment with the same employer and then works the above required number of hours, he shall receive 4 times the number of days of vacation specified above.

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

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates

the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

3.) If the decision of the Administrator is not favorable, an

interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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

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

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END OF GENERAL DECISION

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SECTION 00 08 00 - SPECIAL CLAUSES

1. NOT USED.

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

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

a. Physical Conditions. The indications of physical conditions on the drawings and in the specifications are the result of site investigations. The Government has acquired permits pertaining specifically to this contract. After award a copy of each permit will be provided to the Contractor.

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

c. Transportation Facilities. Railroads and highways serve the general area of the work.

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

5. PUBLIC UTILITIES AND PRIVATE IMPROVEMENTS.

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

b. The attention of the Contractor is directed to the possibility that public utilities or private improvements may be encountered within the construction limits, some of which may be buried, and the existence of which is presently not known. Should any such utilities or improvements be

encountered, the Contractor shall immediately notify the Contracting Officer so that a determination may be made as to whether they shall be removed, relocated, or altered. After such determination is made, the Contractor shall, if so directed by the Contracting Officer, remove, relocate, or alter them as required and an equitable adjustment will be made. In the event the Contracting Officer arranges for such removals, alterations, or relocations to be performed by others, the Contractor shall cooperate with such others during the latter's removal, alteration, or relocation operations.

6. DAMAGE TO WORK. The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clause entitled "Permits and Responsibilities." However, if in the judgment of the Contracting Officer any part of the permanent work performed by the Contractor is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If in the opinion of the Contracting Officer there are no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment pursuant to the Contract Clause entitled, "Changes," of the contract will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment, and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

7 and 8. NOT USED.

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

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

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

12. SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Safety and Health Requirements Manual EM 385-1-1 forms a part of these specifications.

EM 385-1-1 and its changes are available at <http://www.hq.usace.army.mil> (at the HQ homepage, select Safety and Occupational Health). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation. EM 385-1-1 is provided on the St. Louis District web site, however the Contractor shall be responsible for obtaining any changes to the manual, which are available on the above web site.

13. ACCIDENT INVESTIGATIONS AND REPORTING. Refer to EM 385-1-1, Paragraph 01.D. Accidents, involving contractor and/or subcontractor employees performing any work or related work on a USACE project, shall be investigated and reported immediately to the Contracting Officer or authorized Contracting Officer's representative. This reporting requirement applies to on-site or off-site accidents. Upon receipt of the initial accident report notification, the Contracting Officer shall issue additional guidance concerning continuing project operations which may include a "cease work" directive. If a cease work directive is issued, the Contractor will not be allowed to resume work related to the accident until all conditions of the "cease work" directive are met. After the initial notification, the Contractor shall ensure a formal investigation is conducted and reports are completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or an authorized representative within one working day after the accident occurs. The Accident Investigation Report shall be made on ENG Form 3394.

14. ACCIDENT PREVENTION PROGRAM. Refer to Contract Clause FAR 52.236-13 entitled, "Accident Prevention". Within 15 days after receipt of Notice of Award of the contract, and at least 7 days prior to the prework conference, the original and one copy of the Accident Prevention Program shall be submitted to the Contracting Officer for review. A checklist has been included at the end of this section to aid the Contractor in preparing the Accident Prevention Plan. Refer to EM-385-1-1 Appendix A - Minimum Basic Outline for Accident Prevention Plans for additional guidance. The program shall be prepared in the following format:

- a. An executed MVS Form 385-43, Administrative Plan.
- b. An executed MVS Form 385-43/2, Hazard Analysis.
- c. A copy of company policy statement of accident prevention and any other guidance statements normally provided new employees. Each company employee shall be required to sign the company policy statement of accident prevention to verify that all employees have been informed of the safety program, and such signed statements shall be maintained at the project site.

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

15. DAILY INSPECTIONS. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. Reports of daily inspections shall be maintained at the job site. The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

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

16. ENVIRONMENTAL LITIGATION.

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

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

17. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the Contract Clause entitled, "Default (Fixed-Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

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

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

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

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(5)	(6)	(8)	(6)	(7)	(5)	(4)	(4)	(5)	(6)	(7)	(7)

c. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor shall record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract Clause entitled "Default (Fixed Price Construction)".

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

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

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

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

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

(3) Comprehensive General Liability Insurance.

Bodily Injury - \$500,000 per occurrence

(4) Comprehensive Automobile Insurance.

Bodily Injury - \$200,000 each person

\$500,000 each accident

Property Damage - \$ 20,000 each accident

b. Within 15 days after receipt of Notice of Award and before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

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

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

Department of the Army
St. Louis District, Corps of Engineers
St. Louis Area Office; CEMVS-EC-C
1222 Spruce Street
St. Louis, Missouri 63103

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

21. CONTAMINATION OF WATER. In addition to the requirements set forth in 01 11 30-3.3, Protection of Water Resources, the Contractor shall take positive protective measures to prevent spillage of potential pollutant materials such as fuel, emulsion materials, chemicals etc., from storage containers or equipment, into lakes or tributary waters. Such positive protective measures may include, but are not limited to, the following:

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

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

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

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

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

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

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

a. Speed Limits. The Contractor shall be required to strictly adhere to all posted speed limits for all vehicles traveling over local, county and State of Missouri roads.

b. River Stage Limitations. Construction operations may be prevented

and/or suspended due to high Missouri River stages beginning when the St. Charles, Missouri Gage is forecasted to meet or exceed elevation 438.1 feet NGVD and above. See SECTION 02 21 40 - CARE OF WATER, paragraph FLOODING of the specifications for additional guidance on suspension of construction due to river stage elevations. The contractor shall not suspend work or fill any excavated/trenched working areas until directed to do so by the Contracting Officer.

c. Coordination. The Contractor shall coordinate all activities with the local entities and utility companies involved 30 days prior to commencement of work. The Contractor shall adhere to the requirements of the Missouri One Call System. Some Points of Contact are as follows:

Monarch - Chesterfield Levee District District (MCLD)	David Human c/o Husch Blackwell Sanders 190 Carondelet Plaza Suit 600 St. Louis, MO 63105 314-480-1720
AmerenUE	Chris Sanzottera 280 Old State Road, MC653 Ellisville, MO 63021 314-992-8903
AT&T	Sherylene Schmidle 314-949-4230
City of Chesterfield	Mike Geisel 636-537-4769
Monarch Fire Protection District Fire Chief	Thomas Vineyard 314-514-0900
Metropolitan St. Louis Sewer District (MSD)	Rob Daley 636-861-6706
Missouri-American Water Company	Dave Pruitt 314-996-2396
Missouri-American Water Company	Michael McMillion 314-996-2335
St. Louis County Department of Highways and Traffic	Jim Knoll Civil Plan Review Supervisor 314-615-8554
St. Louis County Department of Highways and Traffic	Matt Gruendler Construction Division Manager 314-615-1159

d. Contractor-Furnished Utilities. The Contractor shall provide potable water, electricity, and sanitary facilities as required in the performance of this contract. For existing or other utilities, see paragraph g. below.

e. Traffic Control and Traffic Control Plan. All traffic shall be handled by means of existing pavement and new temporary and/or permanent construction routes. The Contractor shall acquire all necessary permits for hauling over existing area roads. Existing roads used for hauling shall be

cleaned of mud, dirt, debris, dust, etc. throughout the duration of the contract. Any damage to existing roads caused by the Contractor shall be repaired by the Contractor to their pre-construction condition at no expense to the Government.

Within 21 days after Notice to Proceed, the Contractor shall devise a Traffic Control Plan that meets the requirements of the federal Manual on Uniform Traffic Control Devices (MUTCD) guidelines. This Traffic Control Plan shall be submitted to the Contracting Officer for review and government approval (GA). The traffic control plan shall contain individual plan(s) which address traffic control, signals, signage, etc. during the various phase(s) of construction, including any potential temporary road closure(s). Before beginning any construction activities, the Contractor shall videotape the existing condition of all roads to be used in the hauling operation. The Contracting Officer's Representative will be present during all videotaping. Representatives of the City of Chesterfield will be present during the videotaping of roads under the City's maintenance. Three copies of the video shall be provided to the Contracting Officer and City Representative. The Contractor shall be responsible for repairing any damage to roads caused as a result of construction traffic. The Contractor shall be responsible for obliterating any and all temporary roads and connections and restore these areas to their pre-construction condition unless otherwise directed by the Contracting Officer. The Contractor shall additionally return existing roads impacted by construction to their pre-construction condition, unless specifically directed otherwise. Such repairs shall be done at no cost to the Government.

f. Contractor Temporary Stockpile and Staging Area. The Contractor shall as necessary utilize the temporary stockpile and staging area on the existing seepage berm as shown on the drawings. The safekeeping of all equipment and material kept on-site is solely the responsibility of the Contractor. Security fencing is the responsibility of the Contractor. The Contractor shall submit a Temporary Stockpile and Staging Area Plan showing designated areas to be utilized for temporary stockpiling excavated material and topsoil, and areas to be utilized for temporary storing equipment, materials and supplies. The plan shall address alterations and/or temporary improvements to this area, such as clearing, stripping, gravel/rock for temporary parking or storage, temporary access road, etc. This Temporary Stockpile and Staging Area Plan shall be submitted to the Contracting Officer for review and government approval (GA). Upon completion of construction, the seepage berm areas used for stockpiling/staging shall be graded smooth to the slopes, lines and grades which existed prior to disturbance/improvement, and shall be restored to its preconstruction condition and the areas shall be seeded in accordance with SECTION 32 95 00 - ESTABLISHMENT OF TURF. All work shall be coordinated with the Contracting Officer and the Monarch-Chesterfield Levee District.

g. Existing Utilities and Permits. The Contractor is responsible for obtaining and paying for any permits required by City of Chesterfield, St. Louis County or State of Missouri governments and/or utility companies due to construction activities. The Contractor shall field verify the location of existing utilities adjacent to and within the construction limits prior to commencement of work. **The Contractor shall account for such permits costs in his original construction contract bid price.** Known utilities are shown on the plans, **and the field verification of their locations is the responsibility of the Contractor.** The Contractor shall also notify all utilities five working days prior to any and all excavation. The Contractor shall have the utilities locate and flag existing utilities according to State law prior to any excavation. **During review of located and flagged utilities or during**

field verification of the utilities by the Contractor, should the Contractor notice potential or actual interference or conflict of such existing utilities with construction of new work, the Contractor shall immediately notify the Contracting Officer of such potential or actual interference or conflict. The Contractor shall also coordinate with all utilities to support their relocations work, if relocations are required. Any overhead utility lines shall be protected during construction operations in the vicinity of the existing lines, and the Contractor shall coordinate construction activities with the Ameren and any other affected utilities. Installation of any temporary and/or permanent utility items required shall be coordinated with the respective utilities involved.

Any disturbance or damage to existing utilities caused by the Contractor shall require immediate notification to the utility owner, and such disturbance or damage shall be repaired by the Contractor or such repair paid for by the Contractor (should the utility require self-performance of such work) at no expense to the Government.

Excavation Crossing Existing Utilities. There are three locations near Manhole MH-8 highlighted on the drawings where the excavation for the RCP Discharge line will cross existing utilities: a) underneath an Ameren overhead power line which provides service to the Graeler residence to the east of the access road, b) an ATT buried cable which also provides telephone/data service to the same Graeler residence and c) an existing waterline which provides service to the same Graeler residence and to barns/sheds to the east of the access road. Should any protective measures, outages, temporary interruption of service, or temporary or permanent relocation of service to a utility line be required for construction, the Contractor is responsible for all coordination with the utility, the Corps and the landowner, obtaining permits, etc. and any other requirements, and the Contractor is responsible for all associated costs with no further compensation from the Government; **the Contractor shall account for such utility costs in his original construction contract bid price.**

h. Construction Sequence. The Contractor shall proceed with construction in the following order:

(1) Discharge Pipes and Discharge Manholes. The Contractor shall begin construction by installing the discharge pipes and manholes between manhole MH-7 and the outfall. **It is critical that the manhole depth and inverts at MH-8 be located within the 1" plus/minus tolerance for the pipe as the excavation immediately south of this manhole must cross under the existing waterline, called out on the drawings, without disturbing or damaging the waterline.** The discharge pipe between collector manhole MH-4 and discharge manhole MH-6 shall not be installed until completion of installing, developing and testing of the relief wells.

(2) Collector System. After the installing the discharge pipes and manholes between manhole MH-7 and the outfall, the Contractor shall install and develop the new relief wells beginning with the relief well at RW-01 and continuing east in consecutive order to RW-06. The Contractor shall also test the relief wells, and utilize MH-7 and the partially completed discharge system during testing operations to discharge water to outfall at the Master Ditch. After the Contractor completes the installation, development and testing of the relief wells, the Contractor may initiate the installation of the collector system and relief well manholes concurrently. The Contractor can also construct the discharge pipe between collector manhole MH-4 and discharge manhole MH-6 at this time to complete the discharge system.

24. AS-BUILT DRAWINGS.

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

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

25. WORK ADJACENT TO RAILROADS. In as much as this contract contemplates work on or about the premises of Central Midland Railway, hereinafter referred to as "the Railroad", the Contractor shall comply with the following:

a. Notify the Railroad, in writing, at least 30 days in advance of commencing work adjacent to or on the Railroad's property and obtain approval as to its methods of construction and operations.

b. All such work shall be fully coordinated with the operations of the Railroad.

c. In performing such work, all established pertinent regulations and requirements of the Interstate Commerce Commission and the Railroad shall be closely adhered to.

d. All work adjacent to or on the Railroad's property shall be performed so as not to interrupt or delay the operation of trains over the tracks in use, or to interfere with communications and signal lines adjacent to said tracks or upon said premises, except under arrangements effected between the Contractor and the Railroad. During the progress of such work, the Contractor shall contact and maintain liaison with such of the Railroad's officers or representatives as shall be designated by the Railroad so as to ascertain the time of passage of trains at the site of the work, and to clear

the Railroad's tracks and facilities of men, equipment, and obstructions to permit free flow of railroad traffic.

e. The Contractor shall, at all times during the period of construction, keep the Railroad's tracks and roadbed free of earth, mud, rocks, materials, or debris that might be caused to accumulate thereon during progress of the work.

f. The Contractor shall not store or pile any materials, supplies, or equipment closer than 12 feet to the nearest rail of the Railroad's tracks over which trains are currently being operated.

g. The Contractor shall at all times keep covered any pits or openings near or under the Railroad's tracks over which trains are currently being operated, except during the time required for actual operations in making such pits or openings and performing work therein.

h. No crossing of any track or tracks shall be installed nor any vehicles or equipment operated over or across any tracks or under or within 15 feet of any communication, signal, or power lines of the Railroad without the prior consent of the Superintendent of the Railroad. Temporary track crossings, by agreement with the Superintendent of the Railroad, shall be installed by Railroad forces at the Contractor's expense.

i. The Contractor will be responsible for the furnishing of such flagmen, watchmen, or other protective devices prescribed by established regulations of the Railroad and the Interstate Commerce Commission as are required by the Railroad to safeguard its operations and its employees during the Contractor's work.

j. The Railroad may, without expense to the Contractor, maintain a resident engineer and inspectors at all times when work is being performed by the Contractor on or adjacent to the right-of-way of the Railroad and/or construction of new track. When, in the opinion of such engineer or inspector, any work is being performed which may interfere with or endanger Railroad traffic, or whenever any work is being performed within 24 feet of any operating track of the Railroad or any excavation made so that the top of the slope on a 1-1/2V to 1H slope will be within 12 feet of any track, flagmen may be maintained by the Railroad at the Contractor's expense. Before any such work is performed, the Contractor shall contact the Railroad Company's Superintendent, arrange for such flagmen, who shall be employees of the Railroad Company, and deposit with the Railroad Company the estimated cost of such flagging service, any excess deposit to be returned to the Contractor upon completion of the work. Such inspectors, flagmen, and engineer will be employees of the Railroad. The inspectors or engineer shall request the Contracting Officer to stop any work which is being performed when, in their opinion, dangerous conditions have developed or are developing because of such work, provided that said inspector shall specifically inform the Contracting Officer and the Contractor as to the nature of such dangerous conditions. After such stoppage of work, the Contractor shall correct the developed conditions and revise its method of operations as required to meet the inspectors' objections and thereafter proceed with the work in a manner approved by the Railroad and the Contracting Officer.

26 THRU 32. NOT USED

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

a. The Government will furnish to the Contractor the property identified in the Schedule, to be incorporated or installed in the work or used in performing the contract. The listed property will be furnished at the place specified in Special Clause 3, Paragraph d. The Contractor is required to accept delivery, pay any demurrage or detention charges, and unload and transport the property to the job site at its own expense. When the property is delivered, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer. The Contractor shall also report in writing to the Contracting Officer within 24 hours of delivery any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work at the expense of the Contractor, unless otherwise indicated in this contract.

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

<u>QUANTITY</u>	<u>ITEM</u>
6	Survey markers

The value of the aforesaid property is estimated to be approximately \$150.

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

35. CONTRACTOR PERFORMANCE EVALUATIONS. In accordance with the provisions of Subpart 36.201(Evaluation of Contractor Performance) of the Federal Acquisition Regulation (FAR), construction contractor's performance shall be evaluated throughout the performance of the contract. The United States Army Corps of Engineers (USACE) follows the procedures outlined in Engineering Regulation 415-1-17 to fulfill this FAR requirement. For construction contracts awarded at or above \$100,000.00, the USACE will evaluate contractor's performance and prepare a performance report using the Construction Contractor Appraisal Support System (CCASS), which is now a web-based system. After an evaluation (interim or final) is written up by the USACE, the contractor will have the ability to access, review and comment on the evaluation for a period of 30 days. Accessing and using CCASS requires specific software, called PKI certification, which is installed on the user's computer. The certification is a Department of Defense requirement and was implemented to provide security in electronic transactions. The certification software could cost approximately \$110 - \$125 per certificate per year and is purchased from an External Certificate Authorities (ECA) vendor. Current information about the PKI certification process and for contacting vendors can be found on the web site: <http://www.cpars.navy.mil/>. If the Contractor wishes to participate in the performance evaluation process, access to CCASS and PKI certification is the sole responsibility of the Contractor.

STONE SOURCES
ST. LOUIS DISTRICT

Source No.	Producer	MRM*	Lat.	Long.
1.	Tower Rock Stone Co., Ste Genevieve MO.	127.6	38N	90W
2.	Plattin Quarry, Ste. Genevieve, MO.	139.0	38N	90W
3.	Mississippi Lime Quarry, Ste. Genevieve, MO.	155.0	38N	90W
4.	Barnhart Limestone Inc., Barnhart, MO.	156.0	38N	90W
5.	Bussen Quarry, St. Louis County, MO.	168.0	38N	90W
6.	Bellefontaine Quarry, Fort Bellefontaine, MO.	8.0**	38N	90W
7.	Fort Belle Quarry, Ft. Bellefontaine, MO.	7.0**	38N	90W
8.	Calhoun Quarry, Batchtown, IL.	241.0	38N	90W
9.	Wayne Smith Quarry, Louisiana, MO.	281.0	39N	91W
10.	Anna Quarry, Anna, IL.		37N	89W
11.	Bussen Quarry, Eureka, MO.		38N	90W
12.	Calender Quarry, Pittsfield, IL.		39N	90W
13.	Central Stone Quarry #1, Huntington, MO.		39N	91W
14.	Central Stone Quarry #9, Perry, MO.		39N	91W
15.	Central Stone Quarry #33, Florence, IL.		39N	91W
16.	Columbia Quarry Co. #15, Cypress, IL.		37N	89E
17.	Charleston Stone Co., Charleston, IL.		39N	88W
18.	Columbia Quarry #1, Columbia, IL.		38N	90W
19.	Columbia Quarry #9, Dupo, IL.		38N	90W
20.	Falling Spring Quarry Co., Falling Springs, IL.		38N	90W
21.	Magruder Quarry, Troy, MO.		38N	90W

Source No.	Producer	MRM*	Lat.	Long.
22.	Fred Weber Inc., Winfield MO.		38N	90W
23.	Bluff City Mineral, E. Alton, IL.		38N	90W
24.	Columbia Quarry Co. #7, Waterloo, IL.		38N	90W
25.	Seminole Ag. Lime Co., Dexter, MO.		37N	90W
26.	S-S-S Inc., New London, MO.		39N	91W
27.	South East MO. Stone Co., Cape Girardeau, MO.		37N	89W
28.	Base Rock Mineral, (formally know as Resco, Inc.) Bonne Terre, MO.		37N	90W
29.	Williamsville Stone Co., Poplar Bluff, MO.		36N	90W
30.	Nokomis Quarry, Nokomis, IL.		39N	89W
31.	Brickeys Stone Co., Bloomsdale, MO.	136.0	38N	90W
32.	Martin Marietta Aggregate, Perryville, MO.		37N	89W

* Mississippi River Mile

** Missouri River Mile

ACCIDENT PREVENTION PROGRAM

ADMINISTRATIVE PLAN

EM385-1-1 (Sep 08)

Accepted copy must be at work site!

1. Contractor	2. Contract Name & No.	3. Date
4. Project Superintendent	5. Shift/day	5a. Hours/shift
5b. Maximum employees/shift		
5c. Describe major scope of work and location:		
6a. Training - List subjects to be discussed with employees in safety indoctrination.		
6b. TRAINING - List mandatory training and certifications that are applicable to this project (e.g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, boat captains etc. (List the SSHO and attached a copy of OSHO training Certification)		
6c. List major equipment i.e. cranes, dozers, vessels etc.		
6d. List special equipment i.e. radioactive equipment (Moisture Density Gage) etc.		
7. Responsibility & Authority - Who is responsible for safety? <div style="display: flex; justify-content: space-between;"> Project: Corporate: Line of Authority? </div>		
8. Who will conduct safety inspection?	8a. How?	8b. When?
9a. Is safety & health policy attached?	9b. Is safety program attached?	9c. Day & hour weekly safety meeting to be held:
10. How will subcontractor & supplies be controlled?	11. What are their safety responsibilities?	

ACCIDENT PREVENTION PROGRAM

ADMINISTRATIVE PLAN

EM385-1-1 (Sep 08)

Accepted copy must be at work site!

12. Who will report accidents, exposure data?

13. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements:

14. Outline procedures for conducting hazard assessments & written certification of PPE	Who?	When?	How?

15. Names of first aid attendants having certificates	Type of certificate & expiration date	Names of USCG licensed boat operators. Type licence & expiration date.

**ACCIDENT PREVENTION PROGRAM
ADMINISTRATIVE PLAN**

EM385-1-1 (Sep 08)

Accepted copy must be at work site!

Proposed layout of temporary buildings and facilities (including subcontractors) and traffic patterns including access roads, haul roads, R.R.s. utilities, etc.

The _____ will pursue a positive program of training, inspections
(Company)
and hazard control throughout the term of this contract. Mr./Ms. _____ has
responsibility and authority for enforcing them.

Contractor's Signature

Date

C.O.R. Signature and Date

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**ACCIDENT PREVENTION PROGRAM
 CONTRACTOR ACTIVITY HAZARD ANALYSIS
 USACE, St. Louis District**

1. Contract No.	2. Contract Name	3. Contract Administrator:
4. Date	5. Location	6. Estimated Start Date
7. PRINCIPAL STEPS	8. POTENTIAL HAZARDS	9. RECOMMENDED CONTROLS
10. EQUIPMENT TO BE USED	11. INSPECTION REQUIREMENTS	12. TRAINING REQUIREMENTS
Contractor/Superintendent or Safety Officer (Signature & Date)	Contractor/Project Manager Or Representative (Signature & Date)	

INSTRUCTIONS FOR COMPLETION OF CEMVS Form 385-43/2

Item Number	Instructions
1.	Self-explanatory
2.	Self-explanatory
3.	The Area, Resident, Project, or Field Office administering the contract.
4.	Date Hazard Analysis is prepared.
5.	Location of contract or where activity is to be performed.
6.	Estimated start date of the activity being analyzed.
7.	The principal steps of the operation must be identified in sequential order.
8.	Analyze each principal step for potential hazards and identify here.
9.	Specify the controls to mitigate or minimize each potential hazard.
10.	All major pieces of equipment used in each step of the operation must be identified.
11.	List inspection requirements for the work activity and equipment.
12.	List specific training requirements, including hazard communication
13.	The Contract Superintendent or Safety Officer must sign and date analysis.
14.	Contractor/Project Manager must sign and date.



**US Army Corps
of Engineers**
St. Louis District®

**Accident Prevention Plan
Review Checklist
EM 385-1-1 (15 SEP 2008 Version)**

Project Name: Contractor Name: Contract Number: Reviewed By: Review Date: Review Number:

STATUS:

Yes	No	Partial	N/A	Minimum Items Required for Accident Prevention Plan	Comments
				Does the Accident Prevention Plan include the following:	
				1. (A-1.a. thru c.) The signature sheet needs to show the following:	
				a. Plan Preparer	
				b. Plan Approver	
				c. Plan Concurrence	
				2. (A-2.a. thru d.) Background information contains the following:	
				a. Contractor's name	
				b. Contract No.	
				c. Project Name	
				d. Brief description and location on a map?	
				e. Contractor's accident experience (include copy of OSHA 300 Form, etc.)	
				f. Listing of phases of work and hazardous activities requiring an AHA	
				3. (A-3) A "Statement of Safety and Health" Policy is included in the Plan	

					4. (A-4.a. thru h.) Are the responsibilities and lines of authority shown in the following:
					a. A statement of the employer’s ultimate responsibility for implantation of the safety and occupational health program.
					b. Identification and accountability of personnel responsible for safety at corporate and project level including preparation and reviews of AHAs? Resume(s) are required for project site SSHOs.
					c. Line of authority
					5. (A-5.a.&b.) Subcontractors or suppliers provides the following in the APP:
					a. Identification of subcontractors and suppliers (if known)
					b. Safety responsibilities of subs and suppliers
					6. (A-6.a. thru d.) The following training is included in the APP:
					a. Requirements for new hire SOH orientation training at the time of initial hire
					b. List of mandatory training and certifications applicable to this project
					c. Outline requirements (who attends, when given, who will conduct, etc.) for supervisory and employee safety training and meetings?
					d. Requirements for emergency training
					7. (A-7.a.&b.) The following safety/ health inspection requirements are addressed:
					a. List of names responsible for conducting safety inspections (resume should include training/qualifications)
					b. Frequency of inspections (daily requirement)
					c. Furnish sample of form that inspections will be reported on
					d. Indicate deficiency-tracking system and follow up procedures
					e. Identify any external inspections/certifications that may be required
					8. (A-8.a. thru c.) Accident reporting is addressed through the following:
					a. When and who will report the safety exposure man hours monthly
					b. Who will conduct accident investigations, make reports, and fill logs
					c. When and who will make immediate notification of major accidents up the chain of command
					9. (A-1.a. thru jj) Which of the following plans are required by this contract and have they been submitted:
					a. Layout plans (04.A.01)
					b. Emergency response plans to include:
					1. Procedures and test? (01.E.01)

					2. Spill plans? (01.E.01, 06.A.02)
					3. Firefighting plan? (01.E.01, Section 19)
					4. Posting of emergency phone numbers? (01.E.05)
					5. Person-over board/abandon ship drills? (Section 19.A.04)
					6. Medical Support? (Section 03.A.02; 03.D)
					c. Plan for prevention of drug and alcohol and drug use. (01.C.02)
					d. Site sanitation plan? (Section 02)
					e. Access and haul road plan? (4.B)
					f. Respiratory protection plan? (05.G)
					g. Health hazard control plan? (06.A)
					h. Hazard communication program? (06.B.01)
					i. Process Safety Management Plan? (06.B.04)
					j. Lead abatement plan? (06.B.05 and Specs)
					k. Asbestos abatement plan? (06.B.05 and Specs)
					l. Radiation Program? (06.E.03.a)
					m. Abrasive Blasting? (06.H.01)
					n. Heat/cold, monitoring plan? (06.I.02)
					o. Crystalline Silica monitoring plan? (Assessment) (06.M)
					p. Night operations lighting plan? (07.A.08)
					q. Fire prevention plan? (09.A)
					r. Wild land fire management plan? (09.K)
					s. Hazardous energy control plan? (12.A.01)
					t. Critical lift plans submitted? (16.H)
					u. Contingency plan for severe weather? (19.A.03)
					v. Float Plan? (19.F.04)
					w. Site-specific fall protection/prevention plan? (21.C)
					x. Demolition plan (engineer survey included)? (23.A.01)
					y. Excavation/trenching plan? (25.A.01)
					z. Emergency rescue (tunneling)? (26.A)
					aa. Underground construction fire prevention/protection plan? (26.D.01)
					bb. Compressed air plan? (26.I.01)
					cc. Formwork and shoring erection and removal plans? (27.C)
					dd. Precast concrete plan? (27.D)
					ee. Slab jacking plans? (27.E)
					ff. Steel erection plan? (27.F.01)
					gg. Site safety and health plan for HTRW work? (28.B)
					hh. Blasting plan? (29.A.01)

					ii. Diving plan? (30.A.13)	
					jj. Confined spaces program? (34.A)	
					kk. Crane Operator sufficiently meet EM 385-1-1? (16.B.03) Do the crane operator(s) have proof of a biennial crane physical including negative result on substance abuse test?	
					ll. Documentation of rigger qualifications provided to the GDA? (15.B.01)	
					mm. Motorboat operators trained? (19.B.05)	
					10. Detailed AHA for each major phase/activity of work	

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SECTION 01 10 25 - MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 MOBILIZATION AND DEMOBILIZATION. Mobilization and demobilization will not be measured for payment. Payment for costs associated with mobilization and demobilization will be made at the contract lump sum price for "Mobilization and Demobilization", as defined in the Contract Clauses, SECTION 00700.

1.2 REMOVALS. Payment for removals will be made at the contract lump sum price for "Removals", which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment associated with removals as specified in SECTION 02 20 70 - REMOVALS AND DEMOLITION and as shown on the sketches at the end of the section and the drawings.

1.3 CARE OF WATER. Payment for care of water will be incidental to the bid items associated with care of water work as specified in SECTION 31 21 40 - CARE OF WATER, and as shown on the drawings.

1.4 STRIPPING. Payment for stripping will be made at the contract lump sum price for "Stripping", which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment associated with stripping as specified in SECTION 31 21 10 - STRIPPING, and as shown on the drawings.

1.5 ESTABLISHMENT OF TURF. Payment for establishment of turf will be made at the contract lump sum price for "Establishment of Turf", which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment necessary for establishing turf as specified in SECTION 32 95 00 - ESTABLISHMENT OF TURF.

1.6 30" RCP DISCHARGE PIPE. Payment for the 30" discharge pipe will be made at the contract unit price per linear feet for "30" RCP Discharge Pipe", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the 30" discharge pipe, including concrete flared end section, duckbill valve, flowable fill and other applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 31 26 11 - REINFORCED CONCRETE PIPE FOR DISCHARGE PIPE AND PRECAST CONCRETE DISCHARGE PIPE MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings.

1.7 24" RCP DISCHARGE PIPE. Payment for the 24" discharge pipe will be made at the contract unit price per linear feet for "24" RCP Discharge Pipe", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the 24" discharge pipe, including flowable fill and other applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 31 26 11 - REINFORCED CONCRETE PIPE FOR DISCHARGE PIPE AND PRECAST CONCRETE DISCHARGE PIPE MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings.

1.8 24" RCP COLLECTOR SYSTEM PIPE. Payment for the 24" collector system pipe will be made at the contract unit price per linear feet for "24" RCP Collector System Pipe", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the 24" collector system pipe, including flowable fill and other applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM AND MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on

the drawings.

1.9 12" RCP COLLECTOR SYSTEM PIPE. Payment for the 12" collector system pipe will be made at the contract unit price per linear feet for "12" RCP Collector System Pipe", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the 12" collector system pipe, including flowable fill and other applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM AND MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings.

1.10 DISCHARGE MANHOLE. Payment for the discharge manhole will be made at the contract unit price per each for "Discharge Manhole", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the discharge manhole, including applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 31 26 11 - REINFORCED CONCRETE PIPE FOR DISCHARGE PIPE AND PRECAST CONCRETE DISCHARGE PIPE MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings.

1.11 COLLECTOR SYSTEM MANHOLE. Payment for the collector system manholes will be made at the contract unit price per each for "Collector System Manhole", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the collector system manhole, including applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 03 33 00 - CAST-IN-PLACE CONCRETE; SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM AND MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings. Abandonment of pipes shall be incidental to this bid item.

1.12 RELIEF WELL MANHOLE. Payment for the relief well manholes will be made at the contract unit price per each for "Relief Well Manhole", which price and payment shall constitute full compensation for all costs of plant, labor, materials and equipment associated with the relief well manhole, including applicable items in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 03 33 00 - CAST-IN-PLACE CONCRETE; SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM AND MANHOLES; and SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings.

1.13 WELL SCREEN. Stainless steel well screen will be measured for payment by the linear foot of well screen furnished. Payment will be made at the contract unit price per linear foot for "Well Screen, 30 Slot" and "Well Screen, 60 Slot", which price and payment shall constitute full compensation for furnishing the screen as specified in SECTION 33 27 15 - RELIEF WELLS.

1.14 RISER PIPE AND BLANK PIPE. Riser pipe and blank pipe will be measured for payment by the linear foot of riser pipe and blank pipe furnished. Payment will be made at the contract unit price per linear foot for "Riser Pipe and Blank Pipe"; which price and payment shall constitute full compensation for furnishing the riser pipe and blank pipe as specified in SECTION 33 27 15 - RELIEF WELLS.

1.15 WELL DRILLING. Well drilling will be measured for payment by the linear foot of completed well hole from the top of natural ground or embankment/berm to depth shown on sheet B-301. Payment will be made at the contract unit price per linear foot for "Well Drilling", which prices and payments shall constitute full compensation for drilling the well as specified in SECTION 33 27 15 - RELIEF WELLS.

1.16 WELL INSTALLATION. Well installation will be measured for payment by the linear foot of well from the top of permanent riser to the depth of the

screen shown on sheet B-301. Payment will be made at the contract unit price per linear foot, as follows: "Well Installation", which prices and payments shall constitute full compensation for assembling and installing the well screen, permanent riser pipe and gravel pack materials and concrete as specified in SECTION 33 27 15 - RELIEF WELLS.

1.17 WELL ABANDONMENT. Wells ordered abandoned by the Contracting Officer before installation of well screen and riser due to no fault of the Contractor will be paid for at the contract unit price per linear foot for "Well Abandonment 0 - 20 Foot Depth" and "Well Abandonment 21 - 100 Foot Depth", which prices and payments shall constitute full compensation for abandoning the well, as specified in SECTION 33 27 15 - RELIEF WELLS based on the actual well depth. Wells ordered abandoned by the Contracting Officer after installation of well screen and riser due to no fault of the Contractor will be paid for at the applicable contract unit price per linear foot for "Well Screen", "Riser Pipe and Blank Pipe", "Well Abandonment 0 - 20 Foot Depth" and "Well Abandonment 21 - 100 Foot Depth" and the contract unit price per linear foot for "Well Drilling", and "Well Installation" and based on the actual number of feet of well screen, and riser pipe actually placed. No payment will be made for placement or replacement of temporary drilling casings or repair of damage resulting from Contractor operations.

1.18 WELL DEVELOPMENT. Well development will be measured for payment for each hour, measured to the nearest 15 minutes, of actual well development successfully performed. Cost for equipment setup and dismantling shall be included in the hourly cost for jetting and airlifting and will not be paid for separately. Well development will be paid for at the contract unit price per hour for "Well Development", which prices and payments shall constitute full compensation for all costs of plant, labor, materials, and equipment necessary to develop each relief well as specified in SECTION 33 27 15 - RELIEF WELLS.

1.19 PUMPING TESTS. Pumping tests will be measured for payment for each hour, measured to the nearest 15 minutes, of pumping test successfully performed as specified in SECTION 33 27 15 - RELIEF WELLS, paragraph PUMPING TEST, and as otherwise directed by the Contracting Officer. Payment for pumping tests will be made at the applicable contract subdivided unit price per hour for "Pumping Tests", which prices and payments shall constitute full compensation for all costs necessary to perform satisfactory pumping tests as specified in SECTION 33 27 15 - RELIEF WELLS. The cost for placing and removal of equipment shall be included in the hourly cost and will not be paid for separately. No payment will be made for pumping tests not successfully completed.

1.20 RELIEF WELL COLLECTOR SYSTEM. Payment for the collector system will be made at the contract price per each for "Collector System", which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment associated with the relief well collector systems including flowable fill as well as other applicable items as specified in SECTION 31 22 00 - EARTHWORK; SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING; SECTION 33 27 15 - RELIEF WELLS; SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM; SECTION 03 33 00 - CAST-IN-PLACE CONCRETE; SECTION 03 31 01 - FORMWORK FOR CONCRETE; SECTION 03 32 00 - CONCRETE REINFORCEMENT; SECTION 03 34 25 - PRECAST CONCRETE; and as shown on the drawings.

1.21 CRUSHED STONE ROAD REPAIR.

1.21.1 Measurement. Crushed stone road repairs will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional

cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by the local authority shall be furnished by the Contractor.

1.21.2 Payment. Payment for all costs associated with crushed stone road repairs will be made at the contract unit price for "Crushed Stone Road Repair" which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment associated with the road repairs as specified in SECTION 32 22 70 and as shown on the drawings.

1.22 140 LB. RIPRAP.

1.22.1 Measurement. Riprap will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by the local authority shall be furnished by the Contractor.

1.22.2 Payment. Payment for all costs associated with 140 LB. riprap will be made at the contract unit price for "140 Lb. Riprap" which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment as specified in SECTION 32 22 70 and as shown on the drawings.

1.23 BEDDING MATERIAL.

1.23.1 Measurement. Bedding material will be measured for payment by the ton (2,000 pounds) with final quantities rounded to the nearest whole ton. Stone weight to be paid for will be determined from certified weight tickets which shall be furnished by the Contractor without additional cost to the Government. A certified weight ticket shall be defined as each truck being weighed empty, and again when loaded and the ticket, identified by the Contractor's name and the contract number, signed by the approved quarry representative with the statement "certified correct". This procedure shall be followed for each load hauled. The Contractor shall initial each ticket to verify the accuracy and completeness of each ticket before submitting it to the Government. Certification stating the scales were tested and approved by the local authority shall be furnished by the Contractor.

1.23.2 Payment. Payment for all costs associated with bedding material will be made at the contract unit price for "Bedding Material" which price and payment shall constitute full compensation for all costs of the plant, labor, materials and equipment as specified in SECTION 32 22 70 and as shown on the drawings.

1.24 BONDING. Costs for Bonding will not be measured for payment. Payment for costs associated with bonding will be made at the contract price per each for "Bonding", as defined in the Contract Clauses, SECTION 00700.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-END OF SECTION 01 10 25-

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PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

xxx

PART 1 GENERAL

1.1 REFERENCES. Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title.

The document number used in the citation is the number assigned by the sponsoring organization, e.g. UL 1 (1985; Rev thru Nov 1992) Flexible Metal Conduit. However, when the sponsoring organization has not assigned a number to a document, an identifying number has been assigned for convenience, e.g. UL's unnumbered 1992 edition of their Building Materials Directory is identified as UL-01 (1992) Building Materials Directory. The sponsoring organization number (UL 1) can be distinguished from an assigned identifying number (UL-1) by the dash mark (-).

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

1.2.1 See Paragraph entitled, "Availability of Specifications Listed in The DOD Index of Specifications and Standards (DODISS)", of the Instructions to Bidders for the availability of non-commercial specifications.

ALUMINUM ASSOCIATION (AA)
900 19th Street N.W., Ste 300
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: <http://www.aluminum.org>

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: www.aashto.org
Note: AASHTO documents with numbers beginning with m or t are available only in standard specifications for transportation materials and methods of sampling and testing, 1998 @\$289.00\x

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3801
Internet: www.aciint.com

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216 or 800-290-2272
Fax: 972-506-7682
Internet: <http://www.concrete-pipe.org>
e-mail: info@concrete-pipe.org

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: cservice@astm.org
Internet: www.astm.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 305-443-9353
Fax: 305-443-7559
Internet: <http://www.amweld.org>

CODE OF FEDERAL REGULATIONS (CFR)
Order from:
Government Printing Office
Washington, DC 20402
Ph: 202-512-1800
Fax: 202-275-7703
Internet: <http://www.pls.com:8001/his/cfr.html>

CORPS OF ENGINEERS (COE)
Order from:
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Fax: 601-634-2506

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2803 52nd Avenue
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Fax: 301-394-0084
Internet: <http://www.usace.army.mil/>

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
105 West Capitol
P.O.Box 270
Jefferson City, MO 65102
Ph: 573-751-2860
Fax: 573-751-6555
Internet: <http://www.modot.state.mo.us>

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
Department of Commerce
Gaithersburg, MD 20899-0001
Ph: 301-975-4025
Fax: 301-926-1630
Order Publications From:
Superintendent of Documents
U.S. Government Printing Office (GPO)
Washington, DC 20402
Ph: 202-512-1800
Fax: 202-512-2250 Or:

NATIONAL TECHNICAL INFORMATION SERVICES (NTIS)
5285 Port Royal Rd.
Springfield, VA 22161
Ph: 800-553-6847
Fax: 703-321-8547
Internet: <http://www.gov.ntis.gov>

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)
900 Spring St.
Silver Spring, MD 20910
Ph: 301-587-1400
Fax: 301-585-4219

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
209 West Jackson Blvd.
Chicago, IL 60606-6938
Ph: 312-786-0300
Fax: 312-786-0353
Internet: <http://www.pci.org>
e-mail: info@pci.org

PART 2 MATERIALS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01 11 30
ENVIRONMENTAL PROTECTION

PART 1 GENERAL

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

1.1.1 Code of Federal Regulations (CFR).

40 CFR 261 Identification and listing of Hazardous Waste

1.1.2 Engineering Manuals (EM).

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

1.1.3 American Society for Testing and Materials (ASTM).

D 4632 Grab Breaking Load and Elongation of Geotextiles

D 4751 Determining Apparent Opening Size of a Geotextile

D 6241 Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

1.2 DEFINITIONS. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances of plant or animal communities; or degrade the environment from an aesthetic, cultural or historic perspective. Environmental protection is the prevention/control of pollution and habitat disruption that may occur during construction. The control of environmental pollution and damage requires consideration of air, water, land, biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive materials; and other pollutants.

1.3 SUBMITTALS. Within 15 days after receipt of Notice of Award of the contract, the Environmental Protection Plan shall be submitted to the Contracting Officer for approval. 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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Environmental Protection Plan; GA. Submit plan detailing Contractor's procedures for complying with all applicable environmental protection regulations and the special requirements of this contract.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS. The Contractor shall comply with all applicable Federal, State, and local laws and regulations. The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction.

1.4.1 Protection of Features. This section supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. The Contractor shall prepare a list of features requiring protection under the provisions of the contract clause, which are not specially identified on the drawings as environmental features requiring protection. The Contractor shall protect those environmental features shown specially on the drawings, even if such preservation interferes with the Contractor's work under this contract.

1.4.2 Permits. This section supplements the Contractor's responsibility under the contract clause PERMITS AND RESPONSIBILITIES to the extent that the Government has already obtained environmental permits. The Contractor shall comply with the terms, and conditions of these permits which will be provided to the Contractor after award of the contract.

1.4.3 Special Environmental Requirements. The Contractor shall comply with any special environmental requirements, a copy of which, if applicable, is included at the end of this section. These special environmental requirements are an outgrowth of environmental commitments made by the Government during the project development.

1.4.4 Environmental Assessment of Contract Deviations. The Contract specifications have been prepared to comply with the special conditions and mitigation measures of an environmental nature which were established during the planning and development of this project. The Contractor is advised that deviations from the drawings or specifications (e.g., proposed alternate borrow areas, disposal areas, staging areas, alternate access routes, etc.) could result in the requirement for the Government to reanalyze the project from an environmental and cultural resources standpoint. The Contractor must obtain, at his expense, all necessary permits to use alternate sites including, but not limited to, Section 401 and Section 404 of the Clean Water Act, and coordination with the State Historic Preservation Officer regarding Section 106 of the National Historic Preservation Act. Deviations from the construction methods and procedures indicated by the plans and specifications which may have an environmental impact will require an extended review, processing, and approval time by the Government. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.5 ENVIRONMENTAL PROTECTION PLAN. Within 15 calendar days of Notice of Award, the Contractor shall submit an Environmental Protection Plan for review and acceptance by the Contracting Officer. The Government will consider an interim plan for the first 30 days of operations. However, the Contractor shall furnish an acceptable final plan not later than 30 calendar days after receipt of the Notice to Proceed. The Contractor shall meet with

representatives of the Contracting Officer to develop a mutual understanding relative to compliance with this section and administration of the environmental pollution control program. Acceptance is conditional and is predicated upon satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes in the Environmental Protection Plan or operations if the Contracting Officer determines that environmental protection requirements are not being met. The plan shall detail the actions that the Contractor shall take to comply with all applicable Federal, State, and local laws and regulations concerning environmental protection and pollution control and abatement, as well as the additional specific requirements of this contract. No physical work at the site shall begin prior to acceptance of the Contractor's plan or an interim plan covering the work to be performed. The environmental protection plan shall include, but not be limited to, the following:

1.5.1 List of State and Local Laws and Regulations. The Contractor shall provide as part of the Environmental Protection Plan a list of all State and local environmental laws and regulations, which apply to the construction operations under the Contract.

1.5.2 Spill Control Plan. The Contractor shall include as part of the environmental protection plan, a Spill Control Plan. The plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by the Emergency Response and Community Right-to-Know Act or regulated under State or local laws or regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

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

b. Training requirements for Contractor's personnel and methods of accomplishing the training.

c. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

d. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

e. The methods and procedures to be used for expeditious contaminant cleanup.

f. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity spill occurs. The plan shall contain a list of the

required reporting channels and telephone numbers.

1.5.3 Recycling and Waste Minimization Plan. The Contractor shall submit a Recycling and Waste Minimization Plan as a part of the Environmental Protection Plan. The plan shall detail the Contractor's actions to comply with the following recycling and waste minimization requirements:

a. The Contractor shall participate in State and local Government sponsored recycling programs to reduce the volume of solid waste materials at the source;

b. Recovery of metal from debris and sale to recycling operation with Contractor retaining any money derived from sale;

c. Collection of aluminum cans at the site for recycling.

1.5.4 Contaminant Prevention Plan. As a part of the Environmental Protection Plan, the Contractor shall prepare a contaminant prevention statement identifying potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, water, or ground. The Contractor shall detail provisions to be taken to meet Federal, State, and local laws and regulations regarding the storage and handling of these materials.

1.5.5 Storm Water Pollution Prevention Plan (SWPPP). As a part of the Environmental Protection Plan, the Contractor shall prepare a Storm Water Pollution Protection Plan to ensure the design, implementation, management, and maintenance of Best Management Practices (BMP) in order to reduce the amount of sediment and other pollutants in storm water discharges associated with the land disturbance activities; comply with the Water Quality Standards of the state in which the construction activities take place. The SWPPP also ensures compliance with the terms and conditions of the Land Disturbance Permit.

1.5.6 Environmental Monitoring. The Contractor shall include in the plan the details of environmental monitoring requirements under the laws and regulations and a description of how this monitoring will be accomplished.

PART 2 PRODUCTS

2.1 SILT FILTER FENCING. The silt filter fencing shall have a minimum width of 3 feet and shall be fitted with posts and prefabricated post loops or straps spaced between 7 and 10 feet apart. The fabric shall be attached to the posts per the manufacturer's recommendations. Posts shall be supplied meeting the manufacturer's recommendations and shall have a minimum length of 4 feet. The silt filter fabric shall consist of woven long chain polymeric fabric composed of polypropylene, polyethylene, polyester, polyamide or polyvinylidene-chloride fibers weighing 3.0 to 5.0 ounces per square yard, and shall contain stabilizers and/or inhibitors added to the basic plastic if, necessary, to make the filaments resistant to deterioration due to ultraviolet and heat exposure. The fibers shall be stabilized whereby they retain their

positions relative with each other. The filter fabric shall be free of any chemical treatment or coating which reduces permeability and shall be inert to chemicals commonly found in soil. The edges of the filter fabric shall be finished to prevent the outer fiber from pulling away from the geotextile. The silt filter fencing fabric shall conform to the following physical property requirements specified below:

<u>Physical Property</u>	<u>Test Procedure</u>	<u>Acceptable Values*</u>
Tensile Strength (Wet)	ASTM D 4632	100 pound minimum in any principal direction
Elongation - (Wet)	ASTM D 4632	At least 10 percent but no greater than 30 percent in any principal direction
Apparent Opening Size	ASTM D 4751	No finer than No. 50 No coarser than No. 30 U.S. Standard Sieve
Puncture Strength	ASTM D 6241	302.5 pounds minimum

*Unless stated otherwise all numerical values represent average roll values (i.e. any roll in a lot should meet or exceed the minimum value but not exceed the maximum value listed in the table.)

PART 3 EXECUTION

3.1 SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS.

3.1.1 Tree Protection. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized by the Contracting Officer. Where such special use is permitted, the Contractor shall provide effective protection to prevent damage to the trees and other land and vegetative resources. Unless specifically authorized by the Contracting Officer, no construction equipment or materials shall be placed or used within the dripline of trees shown on the drawings to be saved. No excavation or fill shall be permitted within the dripline of trees to be saved except as shown on the drawings.

3.1.2 U.S. Department of Agriculture (USDA) Quarantined Considerations. The Contractor shall thoroughly clean all construction equipment at the prior job site in a manner that ensures all residual soil is removed and that egg deposits from plant pests are not present. The Contractor shall consult with the USDA Plant Protection and Quarantine (USDA - PPQ) jurisdictional office for additional cleaning requirements that may be necessary.

3.1.3 Reserved.

3.1.4 Disposal of Solid Wastes. Solid waste is rubbish, debris, waste

materials, garbage, and other discarded solid materials (excluding clearing debris and hazardous waste as defined in following paragraphs). Solid waste shall be placed in containers and disposed of on a regular schedule. All handling and disposal shall be conducted in such a way as to prevent spillage and contamination. The Contractor shall transport all solid waste off site and dispose of it in compliance with Federal, State, and local requirements. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of the landfill area.

3.1.5 Not Used.

3.1.6 Disposal of Contractor Generated Hazardous Wastes. Hazardous wastes are hazardous substances as defined in 40 CFR 261, or as defined by applicable State and local regulations. Hazardous waste generated by construction activities shall be removed from the work area and be disposed of in compliance with Federal, State, and local requirements. The Contractor shall segregate hazardous waste from other materials and wastes, and shall protect it from the weather by placing it in a safe covered location; precautionary measures against accidental spillage such as berming or other appropriate measures shall be taken. Hazardous waste shall be removed from the project site within 60 days. Hazardous waste shall not be dumped onto the ground, into storm sewers or open water courses, or into the sanitary sewer system.

3.1.7 Fuels and Lubricants. Fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed of in accordance with Federal, State, and local laws and regulations.

3.1.8 Nuclear Density Meters. The Contractor shall adhere to the requirements of ER 385-1-80 when in possession of nuclear density meters.

3.2 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES.

3.2.1 Discovered Historic, Archaeological, and Cultural Resources. If during construction activities, items are observed that may have historic or archaeological value (e.g., Native American human remains or associated objects are discovered), such observations shall be reported immediately to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall prevent its employees from trespassing on, removing, or otherwise disturbing such resources.

3.3 PROTECTION OF WATER RESOURCES. The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters.

3.3.1 Wastewater. Wastewater directly derived from concrete

construction activities shall not be discharged before being treated to remove pollutants.

3.4 PROTECTION OF FISH AND WILDLIFE RESOURCES. The Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to, and damage of, fish and wildlife.

3.5 PROTECTION OF AIR RESOURCES. Special management techniques as set out below shall be implemented to control air pollution by the construction activities. These techniques supplement the requirements of Federal, State, and local laws and regulations; and the safety requirements under this Contract. If any of the following techniques conflict with the requirements of Federal, State, or local laws or regulations, or safety requirements under this contract, then those requirements shall be followed in lieu of the following.

3.5.1 Particulates. Airborne particulates, including dust particles, from construction activities and processing and preparation of materials shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal sites, borrow areas, and all other work areas free from airborne dust which would cause a hazard or nuisance.

3.5.2 Other Air Pollutants.

3.5.2.1 Hydrocarbons and Carbon Monoxide. Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

3.5.2.2 Odors. Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

3.6 INSPECTION. If the Contracting Officer notifies the Contractor in writing of any observed noncompliance with contract requirements or Federal, State, or local laws, regulations, or permits, the Contractor shall inform the Contracting Officer of proposed corrective action and take such action to correct the noncompliance. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action is taken. No time extensions will be granted or costs or damages allowed to the Contractor for any such suspension.

3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES. The Contractor shall maintain all constructed pollution control facilities and portable pollution control devices for the duration of the Contract or for the length of time construction activities create the particular pollutant.

3.8 TRAINING OF CONTRACTOR PERSONNEL. Contractor personnel shall be trained in environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel monthly. The training and meeting agenda shall include

methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, installation and care of facilities (vegetative covers, etc.), and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control. Anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants, shall also be discussed. Other items to be discussed shall include recognition and protection of archaeological sites and artifacts.

3.9 EROSION CONTROL.

3.9.1 Unprotected Erodible Soils. Earthwork brought to final grade shall be finished as indicated. Side 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.

3.9.2 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 in the Contractor Environmental Protection Plan or as indicated on the drawings. Berms, dikes, drains, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.

3.9.3 Silt Filter Fencing.

3.9.3.1 Installation. The silt filter fencing shall be placed in accordance with the manufacturer's recommendations. At the time of installation the silt filter fencing shall be free from defects, rips, holes, flaws, deterioration or damage incurred during manufacturing, transportation, storage or installation and shall be replaced at no additional cost to the Government.

3.9.3.2 Protection. The silt filter fencing shall be protected at all times during construction and if damage occurs the Contractor shall remove and replace with new material at no additional cost to the Government.

xxx

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SECTION 01 13 00 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL CLASSIFICATION. Submittals are classified as follows:

1.1.1 Government Approved (GA). 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."

1.1.2 For Information Only (FIO). 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. These submittals shall be filed and maintained in the Contractor's field office subject to Government spot check.

1.2 APPROVED SUBMITTALS. The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error that 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 the Contracting Officer has approved submittals, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 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 furnished promptly to the Contracting Officer.

1.4 WITHHOLDING OF PAYMENT. Payment for materials incorporated in the work will not be made if required approvals have not been obtained. In addition; the Government will withhold 2% of the total bid price of the applicable item for which FIO technical submittals are not being maintained and on file at the Contractor's Field Office.

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 the submission of submittals for both the Government Approval (GA) and For Information Only (FIO), 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 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-A). At the end of this section is one set of ENG Form 4288-A 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. The Accident Prevention Program (00 08 00-14), Statement of Required Insurance (00 08 00-19), Environmental Protection Plan (01 11 30-1.5), Project Schedule (01 13 20-3.3), and Quality Control Plan (01 14 40-3.2), shall be submitted as set forth in each applicable specification paragraph and shall be included as part of the Submittal Register ENG Form 4288-A. 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. The time for submission, procurement, lag/lead and delivery shall be entered through the Resident Management System (RMS) QC module. After entry of that data, the ENG Form 4288-A (RMS) shall be produced from the RMS QC module.

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. It is the Contractor's responsibility to provide the Corps with timely, accurate, and complete submittal packages. The Corps, in turn, will process, review, and provide official responses to the Contractor within 30 calendar days after physical receipt of the submittal, unless otherwise noted in the Technical Provisions. The Contractor shall incorporate the stated Government review time in the submittal register. No delay damages or time extensions will be allowed for time lost in late submittals. The Contractor's Quality Control representative shall review the listing at least every 60 days and take appropriate action to maintain an effective system. Copies of updated or corrected listing shall be submitted to the Contracting Officer at least every 30 days in the quantity specified.

3.4 TRANSMITTAL FORM (ENG FORM 4025-R). The sample transmittal form (ENG Form 4025-R), attached to this section, shall be used for submitting Government Approved submittals in accordance with the instructions on the reverse side of the form. This form should also be used to document the Contractor Quality Control review, and approval of, For Information Only submittals prior to filing and maintaining in the field office. 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. The ENG Form 4025-R may be prepared by use of the Resident Management System (RMS) QC module.

3.5 SUBMITTAL PROCEDURE. Submittals shall be made as follows:

3.5.1 Procedures. The Contractor shall submit to the Contracting Officer for approval two hard copies and one electronic pdf copy of all shop drawings as called for under the various headings of these specifications.

3.5.2 Deviations. For submittals, which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025-R 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 its 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. The Contracting Officer will retain five copies of the submittal and one copy of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS. Approval of the Contracting Officer is not required on information only submittals. The Contractor shall maintain in his field office all current FIO submittals for use by CQC Manager during the course of the contract. The Government will periodically spot-check the Contractor's compliance with maintaining current and correct FIO submittals for CQC purposes. Any incorrect submittals found during the Government spot check will be immediately corrected by the CQC Manager. If the Contractor fails to keep the FIO submittals current and correct, 2% of the total bid price against the applicable bid item will be withheld. At the completion of the contract, the Contractor will submit the entire file of FIO submittals to the Government.

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: _____

xxx

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE
(Read instructions on the reverse side prior to initiating this form)

TRANSMITTAL NO.

DATE

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO: _____ **FROM:** _____ **CONTRACT NO.** _____

THIS IS A NEW TRANSMITTAL
 THIS IS A RESUBMITTAL OF TRANSMITTAL _____

SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)* _____ **PROJECT TITLE AND LOCATION** _____

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i>	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION <i>(See instruction No. 6)</i>	FOR CE USE CODE
				SPEC. PARA. NO.	DRAWING SHEET NO.			
a.	b.	c.	d.	e.	f.	g.	h.	i.

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

NAME AND SIGNATURE OF CONTRACTOR _____

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)* _____ **DATE** _____

NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY _____

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.

A --	Approved as submitted.	E --	Disapproved (See attached).
B --	Approved, except as noted on drawings.	F --	Receipt acknowledged.
C --	Approved, except as noted on drawings. Refer to attached sheet resubmission required.	FX --	Receipt acknowledged, does not comply as noted with contract requirements.
D --	Will be returned by separate correspondence.	G --	Other (Specify)
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

RMS SUBMITTAL REGISTER INPUT FORM

CONTRACT NUMBER

DELIVERY ORDER

[Enter Contract Number]

NA

Chesterfield Relief Wells

SECTION	PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL											CLASSIFICATION		REVIEWING OFFICE						
			01 - PRECON SUBMITTALS	02 - SHOP DRAWINGS	03 - PRODUCT DATA	04 - SAMPLES	05 - DESIGN DATA	06 - TEST REPORTS	07 - CERTIFICATES	08 - MFRS INSTRUCTIONS	09 - MFRS FIELD REPORT	10 - O&M DATA	11 - CLOSEOUT SUBMITTALS	FOR INFORMATION ONLY	GOVERNMENT APPROVED	DO - DISTRICT OFFICE	AO - AREA OFFICE	RO - RESIDENT OFFICE	PO - PROJECT OFFICE	AE - ARCHITECT / ENGINEER		
00 08 00	14	ACCIDENTAL PREVENTION PROGRAM	X													X						
00 08 00	19	STATEMENT OF REQUIRED INSURANCE	X													X						
00 08 00	23e	TRAFFIC CONTROL PLAN	X														X					
00 08 00	23f	STOCKPILE AND STAGING AREA PLAN	X														X					
01 11 30	1.5	ENVIRONMENTAL PROTECTION PLAN	X														X					
01 13 20	3.3	PROJECT SCHEDULE	X														X					
01 14 40	3.2	QUALITY CONTROL PLAN	X														X					
01 15 00	3.1	ACCESS/HAUL ROAD PLAN	X														X					
02 20 70	1.3.1	DISPOSAL PERMITS											X	X								
02 21 40	1.3.1	CARE OF WATER PLAN	X														X					
03 31 01	1.5.1	SHOP DRAWINGS		X													X					
03 31 01	1.5.2	MANUFACTURER'S LITERATURE			X											X						
03 32 00	1.4.1	SHOP DRAWINGS		X													X					
03 32 00	1.4.2	TEST RECORDS						X								X						
03 32 00	1.4.3	DISPOSITION RECORDS											X	X								
03 32 50	1.5.1	EXPANSION JOINT FILLER AND SEALANTS						X									X					
03 32 50	1.5.2.1	FIELD-MOLDED SEALANT AND PRIMER				X										X						
03 33 00	1.5.1	CONCRETE MIX PROPORTIONS							X							X						
03 33 00	1.5.2	CEMENTITIOUS MATERIAL						X								X						
03 33 00	1.5.2	NON-SHRINK GROUT						X								X						
03 33 00	1.5.2	AIR-ENTRAINING ADMIXTURE AND OTHERS						X								X						
03 33 00	1.5.2	CURING COMPOUND						X								X						
03 33 00	1.5.3	BATCH PLANT			X											X						
03 33 00	1.5.3	MIXERS			X											X						
03 33 00	1.5.3	CONVEYING EQUIPMENT			X											X						
03 33 00	1.5.3	PLACING			X											X						
03 33 00	1.5.3	JOINT CLEANUP			X											X						
03 33 00	1.5.3	CURING			X											X						
03 33 00	1.5.4	PLACEMENT PROCEDURES						X									X					
03 34 25	1.4.1.1	CONCRETE MIX PROPORTIONS						X									X					
03 34 25	1.4.2.1	SHOP DRAWINGS		X													X					
03 34 25	1.4.3.1	CONCRETE TESTS						X								X						
03 34 25	1.4.4.1	CEMENT							X							X						
03 34 25	1.4.4.2	POZZOLAN							X							X						
03 34 25	1.4.4.3	AIR-ENTRAINING ADMIXTURE							X							X						
03 34 25	1.4.4.4	WATER-REDUCING ADMIXTURE							X							X						
03 34 25	1.4.4.5	ACCELERATING ADMIXTURE							X							X						
03 34 25	1.4.4.6	AGGREGATES							X							X						
03 34 25	1.4.4.7	AIR CONTENT							X							X						
03 34 25	1.4.4.8	NON-SHRINK GROUT							X							X						
03 34 25	1.4.5.1	CONSTRUCTION RECORDS											X	X								
31 22 00	1.4.1	PLACEMENT AND COMPACTION CERTIFICATION										X		X								
31 22 00	1.4.2	EXCAVATION PLAN	X													X						
31 22 00	1.4.3	SHORING AND TRENCHING PLAN	X													X						

RMS SUBMITTAL REGISTER INPUT FORM

CONTRACT NUMBER

[Enter Contract Number]

DELIVERY ORDER

NA

Chesterfield Relief Wells

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			01 - PRECON SUBMITTALS	02 - SHOP DRAWINGS	03 - PRODUCT DATA	04 - SAMPLES	05 - DESIGN DATA	06 - TEST REPORTS	07 - CERTIFICATES	08 - MFRS INSTRUCTIONS	09 - MFRS FIELD REPORT	10 - O&M DATA	11 - CLOSEOUT SUBMITTALS	FOR INFORMATION ONLY	GOVERNMENT APPROVED	DO - DISTRICT OFFICE	AO - AREA OFFICE	RO - RESIDENT OFFICE	PO - PROJECT OFFICE	AE - ARCHITECT / ENGINEER
31 22 00	1.4.4	FILL AND BACKFILL PLAN	X												X					
31 22 00	1.4.5	GRADATION			X								X							
31 22 40	1.4.1	GEOTEXTILE CERTIFICATES						X							X					
31 22 40	1.4.2	SILT FENCE CERTIFICATES						X							X					
31 22 40	1.4.3	METHOD OF INSTALLATION	X										X							
31 26 11	1.4.1	PLACING PIPE AND ALIGNMENT PLAN	X												X					
31 26 11	1.4.2	RCP FOR DISCHARGE PIPE COMPLIANCE						X							X					
31 26 11	1.4.3	NON-SHRINK GROUT						X							X					
31 26 11	1.4.4	MANHOLE CERTIFICATES						X							X					
31 26 11	1.4.5	PREFORMED FLEXIBLE JOINT SEALANTS						X							X					
31 26 11	1.4.6	PIPE JOINT GASKETS						X							X					
31 26 11	1.4.7	FLARED END SECTION WITH HEADWALL		X											X					
31 26 11	1.4.8	DUCKBILL VALVE		X											X					
32 22 70	1.4.1	SOURCE OF STONE	X												X					
32 22 70	1.4.2	GRADATION TEST DATA			X										X					
32 22 70	1.4.3	WEIGHT TICKETS						X					X							
32 22 70	1.4.4	METHOD OF PLACEMENT	X												X					
32 95 00	1.5.1	SOIL TEST RESULTS						X							X					
33 27 15	1.4.1	SHOP DRAWINGS		X											X					
33 27 15	1.4.2	WELL DRILLING SPECIALIST	X												X					
33 27 20	1.3.1	PLACING PIPE AND ALIGNMENT PLAN	X												X					
33 27 20	1.3.2	PIPE CERTIFICATION						X							X					
33 27 20	1.3.3	MANHOLE CERTIFICATES						X							X					
33 27 20	1.3.4	PREFORMED FLEXIBLE JOINT SEALANTS						X							X					

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PART 3 EXECUTION (NOT APPLICABLE)

xxx

SECTION 01 13 12
QUALITY CONTROL SYSTEM (QCS)

PART 1 GENERAL

1.1 CONTRACT ADMINISTRATION. The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor must use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

1.1.1 Correspondence and Electronic Communications. For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record will also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors. Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", SECTION 01 13 20 - PROJECT SCHEDULE, SECTION 01 13 00 - SUBMITTAL PROCEDURES, and SECTION 01 14 40 -CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith will be included in the contract pricing for the work.

1.2 QCS SOFTWARE. QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor will be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS. The following is the minimum system configuration that the Contractor must have to run QCS:

Hardware

- IBM-compatible PC with 1000 MHz Pentium or higher processor
- 256+ MB RAM for workstation / 256+ MB RAM for server.
- 1 GB hard drive disk space for sole use by the QCS system.
- SVGA or higher resolution monitor (1024x768, 256 colors).
- Mouse or other pointing device.
- Windows compatible printer. (Laser printer must have 4 MB+ of RAM).
- Connection to the Internet.

Software

- MS Windows 7 or newer.
- Word Processing software compatible with MS Word 2007 or newer.
- Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher.
- Electronic mail (E-mail) MAPI compatible.
- Virus protection software that is regularly upgraded with all issued manufacturer's updates.

1.4 RELATED INFORMATION.

1.4.1 QCS User Guide. After contract award, download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training. The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE. Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the Government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE. Establish, maintain, and update data in the QCS database throughout the duration of the contract at the Contractor's site office. Submit data updates to the Government (e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc.) using the Government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, e-mail or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically includes current data on the following items:

1.6.1 Administration.

1.6.1.1 Contractor Information. Contain within the database the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, deliver Contractor administrative data in electronic format.

1.6.1.2 Subcontractor Information. Contain within the database the name, trade, address, phone numbers, and other required information for all

subcontractors. A subcontractor must be listed separately for each trade to be performed. Assign each subcontractor/trade a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, deliver subcontractor administrative data in electronic format.

1.6.1.3 Correspondence. Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters must be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 Equipment. Contain within the Contractor's QCS database a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Management Reporting. QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.1.6 Request For Information (RFI). Exchange all Requests For Information (RFI) using the Built-in RFI generator and tracker in QCS.

1.6.2 Finances.

1.6.2.1 Pay Activity Data. Include within the QCS database a list of pay activities that the Contractor must develop in conjunction with the construction schedule. The sum of all pay activities must be equal to the total contract amount, including modifications. Group pay activities Contract Line Item Number (CLIN); the sum of the activities must equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests. Prepare all progress payment requests using QCS. Complete the payment request worksheet, prompt payment certification, and payment invoice in QCS. Update the work completed under the contract, measured as percent or as specific quantities, at least monthly. After the update, generate a payment request report using QCS. Submit the payment request, prompt payment certification, and payment invoice with supporting data using the Government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, e-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which will govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC). QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements. Maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. Provide the Government a Contractor Quality Control (CQC) Plan within the time required in SECTION 01 14 40 - CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports. QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS must be the Contractor's official report. Summarize data from any supplemental reports by the Contractor and consolidate onto the QCS-generated Daily CQC Report. Submit daily CQC Reports as required by SECTION 01 14 40 - CONTRACTOR QUALITY CONTROL. Electronically submit reports to the Government within 24 hours after the date covered by the report. Also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking. Use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. Maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. Regularly update the correction status of both QC and QA punch list items.

1.6.3.3 QC Requirements. Develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in QCS. Update all data on these QC requirements as work progresses, and promptly provide this information to the Government via QCS.

1.6.3.4 Three-Phase Control Meetings. Maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.5 Labor and Equipment Hours. Log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.6.3.6 Accident/Safety Reporting. The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. Regularly update the correction status of the safety comments. In addition, utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

1.6.3.7 Features of Work. Include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.8 Hazard Analysis. Use QCS to develop a hazard analysis for each feature of work included in the CQC Plan. Address any hazards, or potential hazards, that may be associated with the work.

1.6.4 Submittal Management. The Government will provide the initial submittal register in electronic format. Thereafter, maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. Use QCS to track and transmit all

submittals. ENG Form 4025R, submittal transmittal form, and the submittal register update must be produced using QCS. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule. Develop a construction schedule consisting of pay activities, in accordance with SECTION 01 13 20 - PROJECT SCHEDULE. Input and maintain in the QCS database this schedule either manually or by using the Standard Data Exchange Format (SDEF) (see SECTION 01 13 20 - PROJECT SCHEDULE). Include with each pay request the updated schedule.

1.6.6 Import/Export of Data. QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.7 IMPLEMENTATION. Contractor use of QCS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA CD-ROM. The Government-preferred method for Contractor's submission of QCS data is by using the Government's SFTP repository built into QCS export function. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Export data onto CDs using the QCS built-in export function. If used, submit CD-ROMs in accordance with the following:

1.8.1 File Medium. Submit in English required data on CD-ROM conforming to industry standards used in the United States.

1.8.2 CD-ROM Labels. Affix a permanent exterior label to each CD-ROM submitted. Indicate on the label in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names. The files will be automatically named by the QCS software. The naming convention established by the QCS software must not be altered.

1.9 MONTHLY COORDINATION MEETING. Update the QCS database each workday. At least monthly, generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, meet with the Government representative to review the planned progress payment data submission for errors and omissions.

Make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE. The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. Take immediate corrective action after receipt of such

notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01 13 20 - PROJECT SCHEDULE

PART 1 GENERAL

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

ENGINEERING REGULATIONS (ER)

ER 1-1-11(1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS. The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Project Schedule; GA. The project schedule shall be submitted to the Contracting Officer within 10 days of Notice to Proceed. The schedule shall contain sufficient detail to show the order in which the Contractor proposes to perform the work and shall comply with the requirements specified in this section.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS. Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT. The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate the Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer, and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE. The Project Schedule shall be submitted to the Contracting Officer within 10 days of Notice to Proceed. The schedule shall contain sufficient detail to show the order in which the Contractor proposes to perform the work and shall contain the following features as a minimum:

- A separate activity bar shall be created for each of the salient features of work (including acquiring materials, plant, equipment, mobilization, and demobilization)
- The start date, completion date, and scheduled percentage complete per month shall be indicated for each activity.
- The start date for the contract, which is the date of Notice to Proceed, any contract required interim completion dates, and the required completion date shall be indicated on the schedule and all time between said dates shall be accounted for on the schedule.
- The associated contract pay item (CLIN, Contract Line Item Number) shall be indicated for each activity. In addition, the dollar amount for each activity shall be indicated.
- A contract earnings schedule shall be included with the Project Schedule indicating the scheduled earnings per month and cumulative earnings through the duration of the contract.

3.3.1 Schedule Updates. The Contractor shall enter the actual progress on the approved progress schedule at least every 30 days and shall submit this 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 a supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

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SECTION 01 14 40
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.

1.1.1 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 (1998)	Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT. Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Quality Control Plan; GA. The Contractor shall submit a quality control plan that shall comply to the requirements specified in this section.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

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 entitled "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 on-site and off-site, and shall be keyed to the proposed construction sequence.

3.2 QUALITY CONTROL PLAN.

3.2.1 General. The Government will consider an interim plan for the first 60 days of operation to be submitted no later than 15 days after receipt of Notice of Award. Subsequent to submittal of an interim plan, the Contractor shall furnish for acceptance by the Government, not later than 35 days after receipt of Notice of Award, the original and one copy of the total Contractor Quality Control Plan proposed for use in implementing the requirements of the Contract Clause entitled "Inspection of Construction". If an interim plan is not submitted, the Contractor shall submit for approval within 15 days after receipt of Notice of Award, the total Quality Control Plan specified above. The plan shall identify personnel, procedures, control,

instructions, test, records, and forms to be used. Construction will be permitted to begin only after acceptance of the CQC Plan.

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

a. A description of the 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 manager or someone higher in the Contractor's organization. Project Manager in this context shall mean the individual with responsibility for the overall management of the project including quality and production.

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

c. The name and address of the Corps of Engineers validated commercial testing laboratory to be used for quality control testing; a letter of validation from the Material Testing Center (MTC); a list of applicable ASTM procedures that the laboratory is validated to perform; and the qualifications of the field technician(s) identified for the project.

d. A copy of the letter to the CQC System Manager signed by an authorized official of the firm, which describes the responsibilities and delegates the authorities of the CQC System Manager.

e. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

f. 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.)

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

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

i. Reporting procedures, including proposed reporting formats.

j. A list of the definable features of work. A definable feature of work is a task that is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list shall 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 the 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 QC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING. After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on-site and off-site 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. The Contractor shall identify an individual within its organization at the worksite who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. This CQC System Manager shall be on the site at all times during construction and shall be employed by the Contractor. This Contractor Quality Control System Manager shall be Corps' certified and shall be approved by the Contracting Officer. To become "certified" the manager must have completed the course entitled "Construction Quality Management for Contractors". This course is offered quarterly at the St. Louis Corps of Engineers District Office. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. Period of absence may not exceed one (1) week at any one time, and not more than ten (10) workdays during a calendar year. The requirements for the alternate will be the same as for the designated CQC Manager.

3.4.1 CQC Organizational Staffing. The Contractor shall provide a CQC staff which shall be at the worksite at all times during progress, with complete authority to take any action necessary to ensure compliance with the contract.

3.4.1.1 CQC Staff. Following are the minimum requirements for the CQC staff. These minimum requirements will not necessarily assure an adequate staff to meet the CQC requirements at all times during construction. The actual strength of the CQC staff may vary during any specific work period to cover the needs of the work period. When necessary for a proper CQC organization, the Contractor shall add additional staff at no cost to the Government. This listing of minimum staff in no way relieves the Contractor of meeting the basic requirements of quality construction in accordance with contract requirements. All CQC staff members shall be subject to acceptance by the Contracting Officer, and shall be certified in accordance with Paragraph QUALITY CONTROL ORGANIZATION.

3.4.1.2 CQC System Manager. The CQC System Manager and staff shall be assigned no scheduling or other duties.

3.4.1.3 Assistant CQC System Manager. The Assistant CQC System Manager shall hold the same qualifications as the CQC System Manager, and shall be on

site at all times.

3.4.2 Organizational Changes. The Contractor shall obtain Contracting Officer's acceptance before replacing any member of the CQC staff. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement.

3.5 SUBMITTALS. Submittals shall be made as specified in SECTION 01 13 00 - SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.6 CONTROL. The controls shall include at least three phases of control to be conducted by the CQC System Manager for all definable features of work, as follows:

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

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. A check to assure that provisions 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 constructing the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that phase of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. The Government shall be notified at least 24 hours in advance of beginning any of the required action of the preparatory phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the 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 preliminary work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.

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

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

d. Resolve all differences.

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

f. The Government shall be notified at least (24) hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

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

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

3.6.4 Additional Preparatory and Initial Phases. As determined by the Government, additional preparatory and initial phases may 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, on-site 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 Material Testing and Inspection. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. All testing shall be performed by a Corps of Engineers validated commercial testing laboratory. Both the field and permanent laboratory shall be validated. A list of current validated testing laboratories can be viewed at www.wes.army.mil/SL/MTC/mtc.htm or you may contact Mr. Steve O'Connor, St. Louis District, Geotechnical Branch, at Telephone 314-331-8445 for laboratory verifications. If the Contractor elects to establish testing facilities, work requiring testing will not be permitted until the Contractor's facilities have been validated by the Materials Testing Center. The Contractor shall ensure that the Materials Testing Center is reimbursed for all costs regarding validation of testing laboratories pertaining to this contract.

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 off-site or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories.

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

3.7.2.2 Capability Recheck. If the selected laboratory fails the capability check, the Contractor will be assessed any charges incurred 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.

3.7.2.3 On-Site Laboratory. If an onsite CQC laboratory is established, the Contractor shall submit the request for validation to the District POC in a timely manner and emphasize the critical need. After the request to the MTC is submitted, the Contractor should anticipate a six-week turn around and reflect the turn-around time in its scheduling. The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing. Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For delivery by mail:

USACE Engineer Research
and Development Center
P.O. Box 631
Vicksburg, MS 39181-0631

For other deliveries:

USACE Engineer Research
and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Coordination for each specific test, exact delivery location, and dates shall be made through the Area Office.

3.8 COMPLETION INSPECTION. At 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 and so notify the Government. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.9 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 the form as produced through the Resident Management System (RMS) QC module 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.
- 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(s) 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 seven 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 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 worksite, 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.

3.11 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM (RMS) FOR CONTRACTOR QUALITY CONTROL OF CONTRACT.

3.11.1 General. The Contractor shall refer to SECTION 00 13 12 for Quality Control System (QCS) requirements.

3.11.2 Quality Assurance Comments. During the course of the contract, the Contractor will receive various Quality Assurance comments from the Government that will reflect corrections needed to Contractor activities or reflect outstanding or future items needing the attention of the Contractor. The Contractor shall acknowledge receipt of these comments by specific number reference on its Daily CQC Report, and shall also reflect on its Daily CQC Report when these items are specifically completed or corrected to permit Government verification.

3.11.3 Contractor's Scheduling System. The Contractor's schedule system shall include, as specific and separate activities, all Preparatory Phase Meetings (inspections), all O&M Manuals and all Test Plans of Electrical and Mechanical Equipment or Systems that require validation testing or instructions to Government representatives.

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SECTION 01 15 00 - TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS. As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall provide the temporary facilities specified herein. The temporary facilities shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall be removed from the site of the work.

1.1.1 No Separate Payment. Payment for materials and equipment furnished under this section will not be paid for separately, and all costs in connection therewith shall be included in other items for which payment is provided.

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

1.2.1 Engineering Manuals (EM).

EM 385-1-1	U.S. Army Corps of Engineers Safety and Health Requirements Manual
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1.2.2 Engineering Pamphlets (EP).

EP 310-1-6A	U.S. Army Corps of Engineers Sign Standards Manual, VOL 1, CH 1
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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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Access/Haul Road Plan; G. Within 15 days after receipt of Notice of Award of the contract, the Contractor shall submit requirements as stated in paragraph HAUL ROADS.

PART 2 PRODUCTS

2.1 TEMPORARY FIELD OFFICE. The temporary field office trailer shall be provided, for co-use by the Government and Contractor, complete with any necessary electrical power to operate the trailer and all telephone service. The trailer shall be located near the site of the work at a location designated by the Contracting Officer.

2.1.1 Trailer Features. The trailer layout shall be with a Government office on one end and the contractor office on the other end. The center of the trailer will be open. A dedicated office for Government use which includes a door to separate the office from the rest of the trailer. The temporary field office trailer shall be a standard trailer approximately 12 feet wide by 36 feet long and have a minimum of 7 feet in headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. The trailer

shall be waterproof, be supplied with heat in season, have a minimum of two doors, electric lights, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation. Sanitary facilities shall be furnished in accordance with Section 02.B of EM 385-1-1. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the trailer through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees below the outside temperature when the outside temperature is 95 degrees Fahrenheit, shall be furnished.

2.1.2 Equipment To Be Provided. The trailer shall be provided with one desk, two chairs, standard office table, and a DSL line or wireless connectivity in the dedicated Government office. Located in the open area shall be six chairs, a drafting table, and two standard office tables. A supply of approved drinking water shall be provided. The trailer shall be equipped with a refrigerator having minimum capacity of 12 cubic feet, and a microwave oven having a minimum capacity of 1.5 cubic feet and 750 watts minimum power. The trailer shall also be equipped with the following items which can be placed in either the open area or the Contractor office for co-use by the Contractor and Government: a copier, HP Laser Jet 4 printer or similar, FAX machine with separate dedicated telephone line, an answering machine, two cordless telephones with a common telephone line, and DSL line. The Contractor will be responsible for the cost of monthly telephone service, FAX line service and the average cost of long distance telephone calls up to \$200.00 per month for Government use.

2.1.3 Security Provisions. Adequate outside security lighting shall be provided. The Contractor shall be responsible for the security of its own equipment.

2.2 TEMPORARY PROJECT AND SAFETY SIGNS. The Contractor shall furnish and erect one temporary project sign and one safety sign at the project site at the location designated by the Contracting Officer. The signs shall conform to the requirements of U.S. Army Corps of Engineers Sign Standard Manual EP-310.1-6a, Section 16 entitled, "Construction Project Signs", Pages 16.1 through 16.4, copies of which are enclosed at the end of this section. If sign is to be placed on a floating plant, it may be half sized. Information will be furnished by the Contracting Officer as to the location and wording of the signs.

2.3 TEMPORARY PROJECT SAFETY FENCING. The Contractor shall furnish and erect temporary project safety fencing as required by the Safety and Health Requirements Manual EM 385-1-1. The safety fencing shall be a high visibility orange color, HDPE open-weave pattern, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. If required by the Safety Manual, fencing shall meet EPA's recommended recovered materials content levels of 60-100% for Postconsumer Content and 90-100% Total Recovered Materials Content.

PART 3 EXECUTION

3.1 CLEANUP. Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away as directed

by the Contracting Officers Representative or designated Government Representative(s).

3.2 RESTORATION OF STAGING AREA. Upon completion of the project, areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition.

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The use of signs to identify Corps managed or supervised design, construction, and rehabilitation projects - both for military and civil works - is an important part of efforts to keep the public informed of Corps work. For this purpose, a construction project sign package has been adopted. This package consists of two signs: one for project identification and the other to show on-the-job safety performance of the contractor.

These two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the contracting officer's representative.

The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood or aluminum with dimensional lumber uprights and bracing. The sign faces are nonreflective vinyl.

All legends are to be die-cut or computer-cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown on pages 16-2 and 16-3. The Communication Red panel on the left side of the construction project sign with Corps Signature (reverse version) is screen-printed onto the white background.

A display of these two signs is shown on the following two pages. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Below are two samples of the Construction Project Identification sign showing how this panel is adaptable for use to identify either military (top) or civil works projects (bottom). The graphic format for this 4'x 6' sign panel follows the legend guidelines and layout as specified below. The large 4'x 4' section of the panel on the right is to be white with black legend. The 2'x 4' section of the sign on the left

with the full Corps Signature (reverse version) is to be screen-printed Communication Red on the white background. The designation of a sponsor in the area indicated is optional with Military or Civil Works construction signs. Signs may list one sponsoring entity. If agreement on a sponsor designation cannot be achieved, the area should be left blank.

This sign is to be placed with the Safety Performance sign shown on the following page. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Legend Group 1: One- to two-line description of Corps relationship to project.

Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Placed below 10.5" reverse Signature (6" Castle).

Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 2a: One- to three-line identification of Military or Civil Works sponsor (optional). Place below Corps Signature to cross-align with Group 5a-b.

Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 3: One- to three-line project title legend describes the work being done under this contract.

Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).

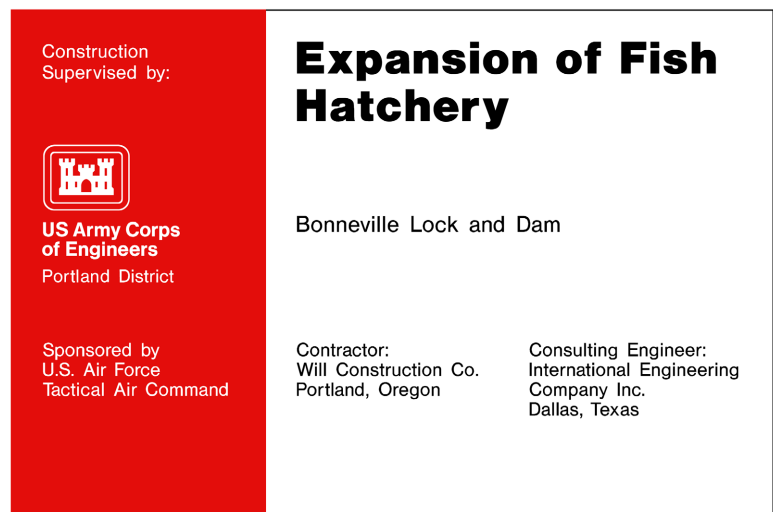
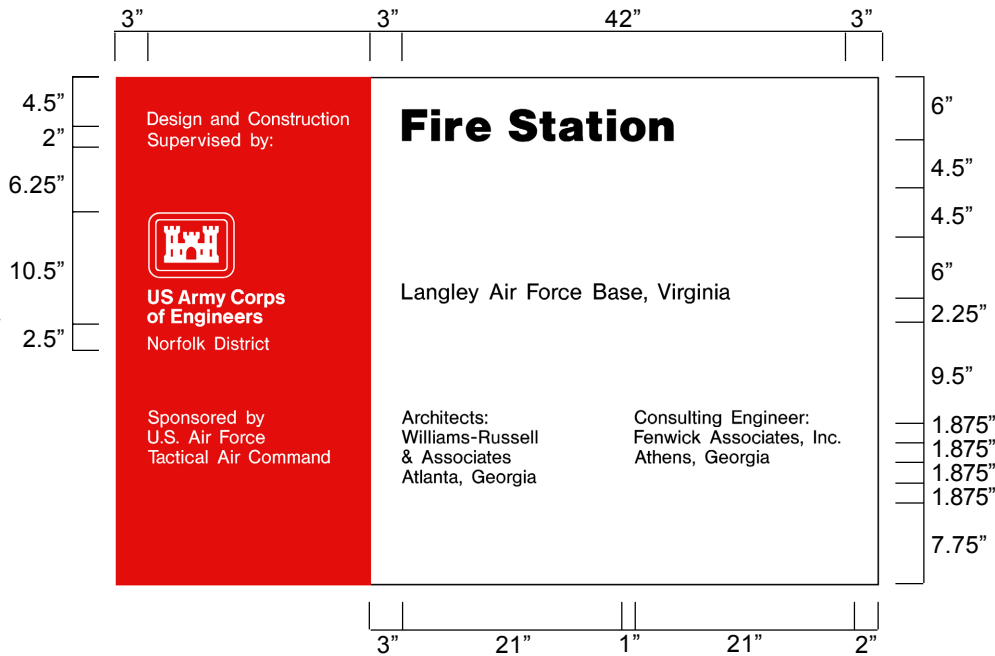
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.

Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4'x6'	4"x4"	HDO-3	48"	WH-RD/BK

Each contractor's safety record is to be posted on Corps managed or supervised construction projects and mounted with the Construction Project Identification sign specified on page 16-2.

The graphic format, color, size and typeface used on the sign are to be reproduced exactly as specified below. The

title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

Safety record numbers are mounted on individual metal plates and are screw-

mounted to the background to allow for daily revisions to posted safety performance record.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with 8" (outside diameter) Safety Green first aid logo.
Color: To match Pantone system 347
Typeface: 3" Helvetica Bold
Color: Black

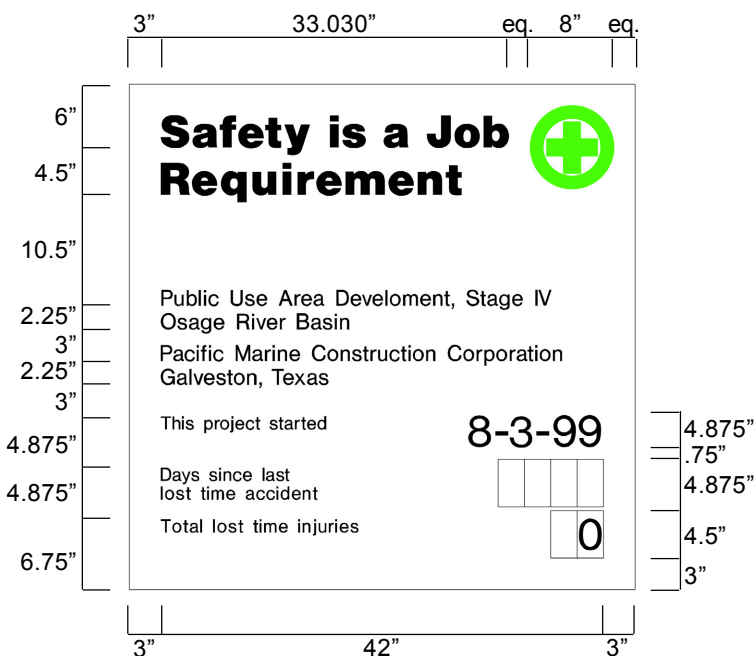
Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

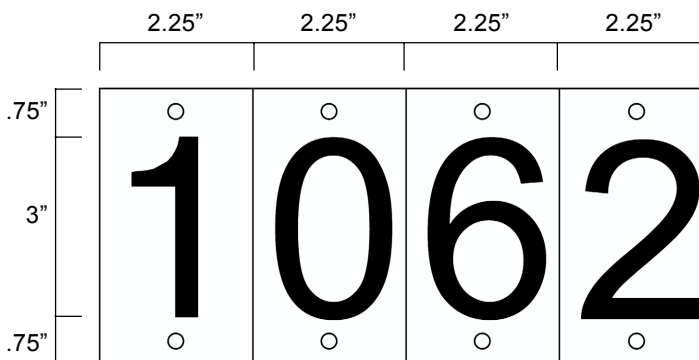
Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" x 4.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4'x4'	4"x4"	HDO-3	48"	WH/BK-SG



All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer representative and shall conform to the size, format, and typographic standards shown on pages 16-2 and 16-3. Detailed specifications for HDO plywood panel preparation are provided in Appendix B.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

For additional information on the proper method to prepare sign panel graphics, contact the district Sign Program Manager.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white nonreflective vinyl film with positionable adhesive backing.

All graphics except for the Communication Red background with Corps Signature on the project sign are to be die-cut or computer-cut nonreflective vinyl, prespaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16-2 and 16-3.

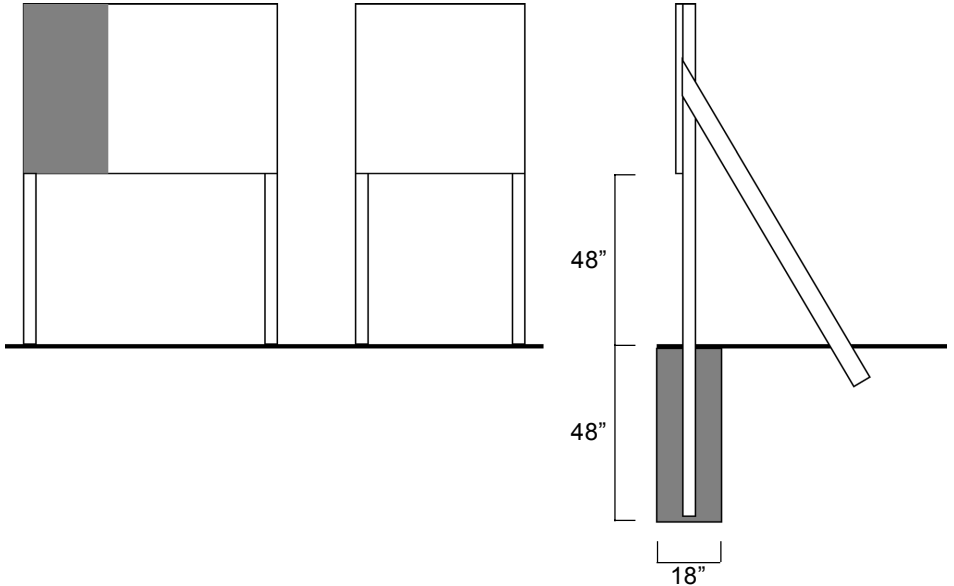
The 2'x 4' Communication Red panel (to match Pantone system 032) with full Corps Signature (reverse version) is to be screen-printed on the white background. Identification of the district or division may be applied under the signature with white cut vinyl letters prepared to Corps standards.

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4" x 4" treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4" x .375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.



Construction Project Identification Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 2a: Military/Civil Works Sponsor

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign

Legend Group 2: Project Title

1. _____
2. _____

Legend Group 3: Contractor/A&E

1. _____
2. _____

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SECTION 01 15 20

SAFETY AND OCCUPATIONAL HEALTH (SOH) REQUIREMENTS

PART 1 - GENERAL

1.1 SAFETY AND HEALTH REQUIREMENTS

Work performed under this contract shall comply with EM 385-1-1: US Army Corps of Engineers Safety and Health Requirements Manual, applicable OSHA requirements in 29 CFR 1910 and 29 CFR 1926, and state specific OSHA requirements where applicable. Matters of interpretation of standards shall be submitted to the Contracting Officer for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply. At a minimum, the Contractor shall develop appropriate Activity Hazard Analysis (AHA) and perform work in a manner consistent with the existing Site Safety & Health Plan (SSHP), as amended.

1.1.1 Activity Hazard Analysis (AHA).

The AHA shall define the activities being performed and identify the sequences of work, specific hazards anticipated, site conditions, equipment, materials, and control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk. AHA format shall be in accordance with USACE EM 385-1-1, (Section 01.A.13.a, and Figure 1-2). The AHA should be used during daily activities to ensure the implementation and effectiveness of the activity's safety and health controls. The AHA list will be reviewed periodically by the Contractor and updated as necessary when procedures, scheduling, or hazards change.

1.1.2 Site Safety & Health Plan (SSHP).

The Contractor shall perform work in a manner consistent with the existing; SSHP for the City of St. Louis Flood Control Project Relief Well Mechanical Rehabilitation and Pumping Tests. The SSHP is intended to address all occupational safety and health hazards (traditional construction as well as contaminant-related hazards) associated with this project. The SSHP is a dynamic document, subject to change as project operations/execution change. The SSHP may require modification to address changing and previously unidentified health and safety conditions. It is the Contractor's responsibility coordinate with the COR to ensure that the SSHP is updated accordingly. Amendments to the SSHP will be submitted to the COR as the SSHP is updated. The SSHP will contain all updates.

1.1.3 Unforeseen Hazardous, Radioactive, Or Toxic Waste (HTRW).

Historically, HTRW (crude petroleum product) has been identified during pilot geotechnical borings. This design has taken this into account and made efforts to avoid known areas. However, if HTRW material is discovered that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14

calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will consider issuing a modification pursuant to FAR 52.243-4, "Changes" and FAR 52.236-2, "Differing Site Conditions".

1.1.4 Safety Meetings.

Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend a preconstruction safety meeting. This includes any assigned safety and health professionals who participated in the development of the AHA(s) and implementation of the SSHP, and applicable sections EM 385-1-1 (including OSHA compliance). The Contractor shall discuss the details of submitted AHAs and any items of concern related to the SSHP or other SOH issues (e.g. Emergency response, accident notification and reporting, routine safety meetings).

Missouri Department
of Labor and
Industrial Relations



Jeremiah W. (Jay) Nixon, Governor
Lawrence G. Rebman, Director

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Division of Labor Standards

Frequently Asked Questions - Construction Safety Training

 site state

The content of this Frequently Asked Questions (FAQs) section has been prepared by the Missouri Department of Labor and Industrial Relations for informational purposes only and should not be construed as legal advice. The answers to the questions below do not include all requirements or stipulations contained in section 292.675, RSMo (hereinafter referred to as "Construction Safety Training Act"). Below this section you will also find the OSHA Construction Safety Program Proposed Rules

The Construction Safety Training Act contains provisions requiring all contractors and subcontractors who enter into contracts with public bodies for construction of public works to train their on-site employees regarding the potential hazards they may encounter while working on the project. The training may be accomplished by providing a standard OSHA 10 Hour Construction course or similar program provided it is as stringent as the OSHA 10 hour program and approved by the Division of Labor Standards ("Division").

When will the Construction Safety Training Act Become effective?

1) When will this law become effective?

August 28, 2009. Any contracts entered into prior to August 28, 2009, are not subject to the training requirement. However, even if a general contractor has entered into a public works contract before the effective date of the law, on-site employees of all subcontractors who enter into subcontracts after the effective date of the law are still subject to the Construction Safety Training Act. Such subcontractors must have their on-site employees complete Required Safety Training before the employees begin on-site work.

What is Required Safety Training?

2) What is Required Safety Training?

Required Safety Training is OSHA 10 Training (a 10-hour course in construction safety and health taught by an OSHA approved instructor), or similar program at least as stringent as OSHA 10 Training, that is approved by the Division.

Does the Construction Safety Training Act Apply to Federally Funded Projects?

3) Will the law apply to federally funded projects?

Any project funded entirely by federal funds is not covered by the Construction Safety Training Act. However if any other public funds are involved, the law does apply.

Who Must Complete Required Safety Training?

4) Who must complete Required Safety Training?

All on-site employees of contractors and subcontractors engaged in the construction of public works must complete

Required Safety Training.

5) Who are “on-site” employees?

“On-site” employees are workers employed by contractors and subcontractors that are, or will be, directly engaged in construction at the site of the public works. “Directly engaged in construction” means work performed in the actual erection of the structure or completion of the improvement constituting the public works. In addition, workers at nearby or adjacent facilities used by the contractor or subcontractor for construction of the public works are “on-site employees”. Workers engaged in the transportation of materials, fuel, or equipment from one place on the site of construction to another place on-site are also “on-site employees”.

6) Are drivers who merely deliver materials, fuel, or equipment from off-site to the site of construction on-site employees who have to complete Required Safety Training?

A driver who merely delivers materials, fuel, or equipment to the site is not required to complete Required Safety Training, so long as the driver does not get out of the truck to do any further work. If the driver also assists in loading or unloading the truck once at the site, or engages in any other work at the site, then the driver is considered an on-site employee directly engaged in construction and the driver must complete Required Safety Training.

7) Do food delivery workers and mail service workers who are not on-site employees directly engaged in construction have to complete Required Safety Training?

No. The Division has **never** taken the position that the Construction Safety Training Act applies to food delivery workers or to mail service workers. The Act only applies to the on-site employees of a contractor or subcontractor who are directly engaged in construction.

8) Although my employees work on public works projects, they do not work on or around construction equipment or activities and therefore are not exposed to most of the hazards found on a construction project. Do my employees have to complete Required Safety Training?

All on-site employees of contractors and subcontractors must complete Required Safety Training whatever their particular duties at the site might be.

9) Do employees who work directly for a public body have to complete Required Safety Training?

Employees of public bodies are not required to complete the training. Only on-site employees of contractors and subcontractors are required to complete Required Safety Training.

10) Do the terms “contractors” and “subcontractors” exclude architects, engineers, etc., who do not have any on-site employees?

The terms “contractors” and “subcontractors,” as defined in the statute, only include businesses that employ on-site employees. If a contractor or subcontractor does not employ on-site employees, then that contractor and/or subcontractor is not subject to the Construction Safety Training Act. Thus, if an architect, engineer, etc. does not employ any on-site employees, the architect, engineer, etc. is not subject to the Construction Safety Training Act.

When Must Employees Complete Required Safety Training?

11) When do on-site employees have to be trained?

All on-site employees of a contractor or subcontractor must have certification of successful completion of Required Safety Training within the 60 days before they begin work on public works projects. Documentation showing that the on-site employee completed the training **after** his or her first day of working on the project will not be in compliance with the Construction Safety Training Act. Such an employee must be removed from the project and the employer will be subject to penalties as described in the Act.

12) Do on-site employees have to complete Required Safety Training each time the employee works on a public works project?

No. **OSHA 10 completion cards for 10-hour courses do not expire.** Documentation that an employee successfully completed Required Safety Training or a training program that would have met the standards now mandated for Required Safety Training before beginning on-site work is compliant with the law. If an on-site employee completed a non-OSHA 10 training program specifically designed to fit the employee’s on-site duties for a previous project, that employee may have to complete further training if he or she is not engaged in the same job function for which the employee received non-OSHA 10 training.

Training Program Requirements and Approval

13) Do training programs have to be pre-approved by the Division?

Training programs may be conducted without prior Division approval. However, any training program found to be non-compliant upon examination by the Division will result in disqualification of all employees who attended the training program and the penalties for non-compliance will apply from the day the untrained employee first began work on-site.

14) What is needed for a training program other than an OSHA 10 hour program to be approved by the Division?

Non-OSHA training programs must be similar to, and at least as stringent as, an OSHA 10-hour safety training program. Note that non-OSHA 10 training programs may be specifically structured to fit the on-site duties of an employee, but again the program must be as stringent as an OSHA 10-hour safety training program. Programs, particularly customized training programs, should be submitted to the Division for approval.

15) Where should a training program be sent for approval as Required Safety Training?

Programs may be mailed to:

Missouri Division of Labor Standards
PO Box 449
Jefferson City, MO 65102

16) My employees work on public works projects, but they work away from the areas of the site where the primary construction is occurring and therefore are not exposed to most of the hazards found on a construction project. Do my employees have to be trained on hazards they will not encounter?

All on-site employees of a contractor or subcontractor must complete Required Safety Training. But employees are not limited to construction training or general industry training programs to fulfill the training requirements of the Construction Safety Training Act. If the contractor or subcontractor determines that a construction training program or general industry training program would not be beneficial for a particular employee or class of employees, it may find or structure a training program that is specifically tailored to the on-site duties of those employees and submit it to the Division for approval. The Division simply requires that any alternative training program be as stringent as an OSHA 10 Training program for construction workers and/or general industry workers. The Division will not accept proof that an employee successfully completed a customized alternative safety training program as a fulfillment of the training requirement of the Act unless the employee is engaged in the same job functions for which he or she received customized alternative training.

17) Can employees credit training hours from previous courses towards the 10 hours of Required Safety Training?

Prior training courses targeted at specific topics may count towards the 10 hours of Required Safety Training. Upon the provision of appropriate documentation, the Division will make an assessment as to how much credit will be given.

18) What happens if an on-site employee completes a training program that the Division later decides not to approve?

Proof of training from a training course that the Division does not approve will not be considered to be compliant with the law. Any on-site employee who received training through a training program that the Division does not approve must be removed from the project and the employer will be subject to penalties as described in the Construction Safety Training Act.

Proof of Required Safety Training

19) If the employee received training prior to August 28, 2009, will it be acceptable?

OSHA completion cards for 10-hour courses do not expire. The Division will accept proof that an on-site employee successfully completed 10 hours of OSHA training prior to August 28, 2009 as a fulfillment of the safety training requirement of the Construction Safety Training Act. Proof of other training may also be submitted to the Division for review to determine whether the other training will fulfill the training requirement of the Act. Generally, the Division will accept proof that an employee has successfully completed training from a previous program if the program would have met the standards now mandated for Required Safety Training.

20) What happens if employees do not have the training?

On-site employees who have not completed Required Safety Training by their first day on-site must be removed from

the project and the employer will be subject to penalties as described in the Construction Safety Training Act.

21) What happens if employees do not have proof of training?

On-site employees who cannot provide proper documentation of completion of Required Safety Training when requested will be afforded 20 days to produce the documentation. If the documentation is not provided within 20 days, the employees must be removed from the project and penalties will be assessed from the first day the employee began work on-site.

22) Should contractors and subcontractors attach a copy of proof of successful completion of Required Safety Training to the first certified payroll submitted to the contracting agency and on succeeding payrolls when a new employee is listed?

This practice is acceptable (and may be considered a good practice), but it is not required. Submission of proof of successful completion of training is not required until requested by the Division.

23) What happens if the Division approved a training program, but later learned that the attendees did not receive a full 10 hours of training?

On-site employees must receive 10 hours of Required Safety Training. If an on-site employee has documentation that he or she successfully completed Required Safety Training from a program that did not actually provide 10 hours of training, the documentation is fraudulent. The Division will not accept fraudulent documentation as it is not compliant with the law. On-site employees providing such documentation must be removed from the project and the employer will be subject to penalties as described in the Construction Safety Training Act

24) Where can employees get the required training?

A list of OSHA 10 training programs is available at http://outreachtrainers.org/client/trainer_results.aspx. Note that this is not a complete list of training programs. Employees may also complete 10 hours of non-OSHA 10 training as long as the training program is at least as stringent as an OSHA 10 training program and has been approved by the Division. View the list of [training providers](#) that have notified the Division that they provide training. Information about available training programs may also be obtained from workers' compensation insurance providers.

Penalties for Non-Compliance

25) What is the penalty for non-compliance?

The penalty for each non-compliant worker is \$2,500 plus \$100 for each calendar day, or portion of a day, that the employee worked on-site.

26) Who pays the penalty?

Each contractor and subcontractor is liable for the penalties incurred as a result of its own on-site employees who are not compliant with the required safety training. Additionally, each contractor and subcontractor is also jointly liable for the penalties incurred as a result of on-site employees of any of its subcontractors who are not compliant with the required safety training. If the penalty arose due to a non-compliant worker of a subcontractor, the general contractor or superior subcontractor may withhold the amount of any penalty levied from any monies due to the subcontractor relating to the public works project. If payments to the subcontractor have already been made in full, the general contractor or superior contractor may pursue collection of the penalty in the Circuit Court in the county where the public works project was located.

Title 8—DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
Division 30—Division of Labor Standards
Chapter 6—OSHA Construction Safety Program Proposed Rules

8 CSR 30-6.010 Definitions

PURPOSE: This rule sets forth the definition of terms for purposes of implementation of the Construction Safety Training Act, section 292.675, RSMo, and the rules in this chapter.

- The term "construction" means construction, reconstruction, demolition, painting and decorating, or major repair.
- The term "public works" means fixed works constructed for public use or benefit or paid for wholly or in part out of public funds. The term public works includes any work done directly by any public utility company when performed by it pursuant to the order of the public service commission or other public authority whether or not it be done under public supervision or direction or paid wholly or in part out of public funds, but does not include work performed by public utilities which are under the jurisdiction of the public service commission, or their contractors, or work performed at or on facilities owned or operated by said public utilities. The term public works also does not include rail grade crossing improvement projects where there exists a signed agreement between a railroad and the Missouri Department of Transportation in an order issued by the Department of Transportation ordering such construction.
- The term "public body" includes the state of Missouri or any officer, official authority, board or commission of the state, or other political subdivision thereof, or any institution supported in whole or in part by public funds. The term public body excludes the federal government, its officers and political subdivisions.
- The term "Division" or "DLS" means Division of Labor Standards, Department of Labor and Industrial Relations.
- The term "on-site" means the physical place and the premises appurtenant thereto where work for the public works contract is carried on and which can reasonably be said to be included in the site. Except as otherwise provided in this section, fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards and the like, are part of the worksite of a construction job provided they are dedicated in a substantial degree to the performance of the public works project, and are so located in proximity to the actual construction location that it would be reasonable to include them. The dedication of seventy-five percent (75%) or more of the output of a fabrication plant, batch plant and the like, to the public works project raises a rebuttable presumption that the facility is part of the site of the building or construction job. The presumption may be rebutted by evidence showing that the facility was established for other legitimate commercial purposes that make the facility useful well after the public works project has been completed. Not included in the site of the building or construction job are permanent home offices, branch plant establishments, fabrication plants and tool yards of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular public works project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, tool yards and the like, of a commercial supplier or materialman which are established by a supplier of materials for the project before opening of bids and not on the project site are not included in the site of the building or construction job. Permanent, previously established facilities are not a part of the site of the building or construction job, even where the operations for a period of time may be dedicated exclusively, or nearly so, to the performance

- of a public works project.
- The term “on-site employee” means laborers, workmen, drivers, equipment operators, and craftsmen employed by contractors and subcontractors to be directly engaged in construction on-site at the public works construction project; employees working at a nearby or adjacent facility used by the contractor or subcontractor for construction of the public works; and persons engaged in on-site transportation of materials, fuels, or equipment.
 - The term “directly engaged in construction” means work performed in the actual erection of the structure or completion of the improvement constituting the public works. Persons engaged solely in the transportation of materials, fuel, or equipment to the site of the public works shall not be deemed to be directly engaged in construction.
 - The term “contractor” means any person entering into a contract with a public body for construction of public works which employs on-site employees for purposes of completion of the contract.
 - The term “subcontractor” means any person entering into a subcontract with a contractor for construction of public works which employs on-site employees for purposes of completion of the contract.
 - The term “OSHA” means Occupational Safety and Health Administration.
 - The term “OSHA 10 Training” means a 10-hour course in construction safety and health taught by an OSHA approved trainer.
 - “Or similar program” means a 10-hour safety training program specifically related to the on-site duties of the employee.
 - “Required Safety Training” means OSHA 10 Training, or similar program at least as stringent as OSHA 10 Training that has been approved by the Division.

8 CSR 30-6.020 OSHA Required Safety Training Mandate

PURPOSE: This rule sets forth Required Safety Training mandates relative to work performed on public works for purposes of section 292.675, RSMo.

- Any person entering into a contract with a public body for construction of public works and any person entering a subcontract with a contractor for construction of public works shall provide Required Safety Training for its on-site employees. Each on-site employee must have a certification of successful completion of Required Safety Training before beginning work on the public works project. An employee shall not be permitted to work on the project if the employee has not successfully completed Required Safety Training.
- Employers may not require employees to pay for Required Safety Training.
- When requested by an agent of the Division, the documentation establishing proof of an on-site employee’s successful completion of Required Safety Training must be provided. Acceptable documentation includes certification cards and other documents issued by the training provider, or a copy of these documents. Employers may maintain copies of these records on-site. At minimum, these records must state the employee’s name, certify that the employee successfully completed Required Safety Training, and specify the date that the employee successfully completed training. An affidavit made by

the employer or employee attesting that the employee completed training is not sufficient. If the employee and/or employer is unable to provide appropriate documentation upon request, the Division will allow 20 days for the documentation to be produced. If the documentation is not produced within the 20 days, the employee for whom there is no documentation of completion of Required Safety Training must be removed from the project and the employer will be subject to penalties as described in section 292.675.4, RSMo, and in 8 CSR 30-6.040. Proof that the employee completed training after his or her first day of working on the project is insufficient.

- Required Safety Training certification does not expire. The Division will accept proof that an employee has previously successfully completed training from a program that would have met the standards now mandated for Required Safety Training.
- An on-site employee who provides a false training certification has not provided documentation of successful completion of Required Safety Training. Such employee must be removed from the project and the employer will be subject to penalties as described in section 292.675.4, RSMo, and in 8 CSR 30-6.040.
- An on-site employee who provides proof of training from a program that does not meet the standards of Required Safety Training has not provided documentation of successful completion of Required Safety Training. Such employee must be removed from the project and the employer will be subject to penalties as described in section 292.675.4, RSMo, and in 8 CSR 30-6.040.
- The provisions of the Construction Safety Training Act, section 292.675, RSMo, will apply to all public works contracts and subcontracts entered into on or after August 28, 2009 without exception. If a subcontractor enters into a subcontract with a contractor to work on a public works project on or after August 28, 2009, the subcontractor shall provide Required Safety Training for its on-site employees. Such subcontractors shall provide Required Safety Training even if the general contract was signed prior to August 28, 2009.

8 CSR 30-60.030 Contents of Resolutions, Ordinances, Bids, and Contracts

PURPOSE: This rule sets forth the contents that must be in resolutions, ordinances, bids, and contracts of public works for purposes of section 292.675, RSMo.

- The public body shall include in the resolution or ordinance and in the call for bids for the contract notice that the requirements of section 292.675, RSMo, will apply with regard to its public works project.
- The public body awarding the contract shall incorporate into the contract notice that the requirements of section 292.675, RSMo, including but not limited to the penalty provisions in section 292.675.4, RSMo, will apply to the general contractor and all subcontractors contracting to provide on-site work under that contract.
- The general contractor shall incorporate in all subcontracts with subcontractors for public works projects notice that the requirements of section 292.675, RSMo, will apply to such subcontractors.

8 CSR 30-6.040 Penalties

PURPOSE: This rule sets forth the penalties for violations of section 292.675, RSMo.

- Employees who have not successfully completed Required Safety Training shall not be permitted to work on-site on a public works project. Contractors and subcontractors that allow their employees to work on the project before the employee has successfully completed Required Safety Training will be subject to penalties. Any penalties incurred by subcontractors for failure to provide the requisite training may be assessed against any contractor under whom they are working.
- The public body is entitled to penalties against the contractor or subcontractor in the amount of \$2,500 for each employee employed by the contractor or subcontractor that has not successfully completed Required Safety Training plus an additional \$100 for every calendar day or portion thereof that each such employee remains working on the project without having successfully completed Required Safety Training. The public body shall withhold the full amount of all such penalties incurred, whether by contractor or subcontractor when making payments to the contractor under the contract.
- If the contractor or subcontractor fails to pay the penalty assessed within 45 days following notification of the assessment, the Division shall pursue an enforcement action to enforce the monetary penalty against the contractor or subcontractor in circuit court. If the Division is the prevailing party in such action, the Division is entitled to recover from the defendant its actual costs of enforcement in addition to the penalty amount.

8 CSR 30-6.050 Audits, Investigations and Assessments

PURPOSE: This rule sets forth the authority of the Division to investigate compliance with section 292.675, RSMo, and these rules and the authority of the Division to assess penalties.

- (1) The Division has the right to audit training programs to ensure compliance with these rules and section 292.675, RSMo.
- (2) The Division has the authority to investigate compliance with the requirements of section 292.675, RSMo, and these rules. The Division also has the authority to assess the amount of penalties due for noncompliance with the requirements of section 292.675, RSMo, and these rules.

8 CSR 30-060 Rights of General Contractors against Subcontractors

PURPOSE: This rule sets forth the rights of general contractors against subcontractors when the general contractor is held liable for such subcontractor's violation of section 292.675, RSMo.

General contractors are not responsible for training subcontractors' employees but will be liable for penalties due to violations of subcontractors. General contractors may withhold penalties incurred due to violations by a subcontractor from payments owed to the subcontractor. If the general contractor is unable or unwilling to withhold such payments for this purpose, the general contractor may recover from the subcontractor the amount of the penalty it has paid due to the fault of the subcontractor in an action filed in the circuit court in the county in which the public works is located.

8 CSR 30-070 Required Safety Training Guidelines

PURPOSE: This rule sets forth guidelines for Required Safety Training as required under these rule and section 292.675, RSMo.

- Instructional times must be at least 10 hours. Breaks and lunch periods are not counted as instructional time.
- A trainer may not cover any topic for more than four hours.
- Classes may be broken into segments. Each segment must be at least one

- hour and the entire course must be successfully completed within six months.
- Trainers must provide students reference materials which highlight the key training points. At minimum, the trainer should provide students a fact sheet on each topic covered.
 - Training sessions must be in person or by video conferencing. If using the video conferencing option, students must be able to have their questions answered quickly and effectively, students must receive printed materials in advance, and the trainer must ensure actual attendance of all students in all portions of the program.

8 CSR 30-080 Required Safety Training Topics

PURPOSE: This rule sets forth the requisite topics and class times for Required Safety Training as required under these rules and section 292.675, RSMo.

- Trainers may use the guidelines set forth in the federal Department of Labor Occupational Safety and Health Administration Regulations, *e.g.*, Safety and Health Regulations for Construction, 29 CFR 1926, Occupational Safety and Health Standards, 29 CFR 1910, when developing a Required Safety Training program that complies with the requirements set forth in this rule.
- Required Safety Training should cover hazard identification, avoidance, control and prevention.
- Each Required Safety Training shall include a one-hour introduction informing employees of the right to a safe workplace, employer responsibilities, the telephone number for reporting safety violations, other available resources, and the protection against retaliation for employees who have reported safety violations.
- Three hours of the Required Safety Training for construction workers shall cover hazards, including health hazards in construction, and personal protective and lifesaving equipment.
- Two hours of the Required Safety Training for construction workers shall cover two or more of the following subjects: materials handling, storage, use and disposal; tools, hand and power; scaffolds; cranes, derricks, hoists, elevators, and conveyors; excavations, stairways and ladders; or other hazards.
- Four hours of Required Safety Training for construction workers shall be devoted to any general industry hazards or policies, and/or expand on the topics discussed in subparts (4) and (5).
- Required Safety Training for general industry workers shall devote one hour to walking and working surfaces; one hour to exit routes, emergency action plans, fire prevention plans, and fire protection, electrical; one hour to personal protective equipment; and one hour to hazard communication.
- Two hours of Required Safety Training for general industry workers shall cover two or more of the following subjects: hazardous materials; materials handling, machine guarding; introduction to industrial hygiene; blood borne pathogens; ergonomics; safety and health program; or other hazards.
- Two hours of Required Safety Training for general industry workers may cover any general industry hazard or policies, including the hazards and policies listed in subsection (7) and (8).

- Training programs specifically related to the on-site duties of other classes of employees that are as stringent as Required Safety Training for construction workers and general industry workers may be submitted to the Division for Required Safety Training approval.

8 CSR 30-090 Required Safety Training Records and Retention

PURPOSE: This rule sets forth information that must be retained as part of Required Safety Training records and the period for which trainers must retain these records.

- Trainers shall retain class files for five years.

The file for each class shall include student sign-in sheets for each class day, and specify the date and location of the class; student addresses; a list of the topics taught and the amount of time spent on each; if successful completion of training cards are dispensed to students, records which indicate the card number dispensed to each student (such as a copy of the successful completion of training card); if successful completion of training certificates, or similar document, are dispensed to students, a copy of the successful completion of training certification, or similar document.

Contact Information

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SECTION 02 20 70
REMOVALS AND DEMOLITION

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for the removals and demolition of the items which may be encountered in the field during performance of the work and the disposal of such items. All procedures shall ensure for safe performance of work, safety of the general public. All work shall be conducted and completed in a neat, workmanlike and acceptable manner. Removals including removing an existing concrete wall near manhole MH-5 and part of an existing concrete slab between manholes MH-5 and MH-6 sufficient to install the collector system pipe and/or manholes, and removal of an existing concrete grain pit with grating, as shown on the drawings. There is also a paver block patio near manhole MH-3 which may need to be partially removed to install collector pipe, stored and then reinstalled.

1.2 PERMITTING. The Contractor shall comply with all Federal, State, and Local permits concerning but not limited to demolition, removal of debris, disposal, etc.

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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Permits; FIO. Submit written evidence that all Federal, State, and local permits concerning but not limited too demolition and removal of debris and material have been obtained.

1.4 QUALITY CONTROL.

1.4.1 General. The Contractor shall establish and maintain quality control and maintain records of quality control for all construction demolition and removal operations including but not limited to the following:

- (1) Removals. Limits, percentage of area complete; type of material.
- (2) Demolition. Limits, percentage of area complete; type of material.
- (3) Disposition of Removals and Demolition. Method and location of disposition; damage to improvements or existing structures not to be disturbed.
- (4) Monitoring.
- (5) Protection (respiratory, eye, and clothing).
- (6) Work Methods.
- (7) Cleanup and Disposal.
- (8) Reporting. A copy of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished

to the Contracting Officer daily.

1.4.2 Permits and Responsibilities. The Contractor shall, without additional expense to the Contracting Officer, be responsible for obtaining any necessary licenses and permits, and for complying with all applicable Federal, State, and municipal laws, codes, and regulations; in connection with prosecution of the work.

PART 3 - EXECUTION

3.1 REMOVALS.

3.1.1 Removals of Obstacles and Miscellaneous Items. The Contractor shall remove any obstructions or miscellaneous items encountered in the field during installation of items required during performance of the work. The Contractor shall keep track of any such items demolished and removed, and note such items on his daily construction logs.

3.1.1 Removals of Existing Concrete Structures. The Contractor shall completely remove an existing concrete wall near manhole MH-5 prior to installing the collector pipe and manhole in this area which is called out on the drawings. The Contractor shall sawcut and remove part of a concrete slab between manholes MH-5 and MH-6, sufficient to install the collector system pipe and/or manhole in this area. The Contractor shall submit the Contracting Officer for approval a drawing or sketch showing the limits of the saw cut, prior to beginning removal of the concrete slab. The Contractor shall also excavate and remove the existing concrete grain pit with grating, as shown on the drawings.

3.1.2 Temporary Removal of Existing Paver Block Patio. The Contractor may need to remove an existing paver block patio near manhole MH-3 to have sufficient room to install the collector pipe. If parts of the paver blocks for the patio need to be removed, they shall be carefully removed so as not to damage the paver block, stored in a secure location and then reinstalled after the pipe installation is complete. The Contractor shall notify the Contracting Officer and the homeowner at least two weeks in advance prior to beginning any temporary removal of the patio.

3.2 DISPOSAL.

3.2.1 Salvageable Material. The Contracting Officer may require certain items to be salvaged and remain property of the local sponsors.

3.2.3 Burning. The use of burning at the project site is not permitted.

3.2.4 Off-Site. Concrete structures, masonry, fencing, concrete, utilities, roadway surfacing, base material, culverts, and other waste material shall be disposed of off the project site in accordance with all applicable Federal, State and local regulations.

3.3 CLEAN UP. Debris and rubbish shall be removed from the project site. 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.

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SECTION 02 20 75 - PIPE ABANDONMENT

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, materials, and performing all operations in connection with pipe abandonment (two culverts and a septic discharge line) at Monarch-Chesterfield levee including cleaning, grouting and disposing of materials.

1.2 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.2.1 American Society for Testing and Materials (ASTM).

C 94	Ready-Mixed Concrete
C 144	Aggregate for Masonry Mortar
C 150	Portland Cement
C 618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

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 01300:

1.3.1 Statements.

(1) Equipment; GA. Submit descriptions of the type of equipment for cleaning the drain pipe for grouting, the grout mixing equipment and the grout placing equipment.

(2) Procedures; GA. Submit description of the methods to be used to clean the drain pipe, the methods for bulkheading the pipe and the procedures for performing the grouting operations.

(3) Grout Mixtures; GA. Submit description of the grout mixtures to be used including the sources of materials.

(4) Concrete Mixture; GA. Submit description of the concrete mixtures to be used including the sources of materials.

1.3.2 Certificates. Grout; GA. Submit manufacturer's certificates of compliance stating that grout materials meet specified requirements.

PART 2 PRODUCTS

2.1 GROUT MIXTURE. The grout mixture design shall be the responsibility of the Contractor. The grout shall be a mixture of cement, meeting the requirements of ASTM C 150, Type I or II, and at the option of the Contractor, pozzolan, meeting the requirements of ASTM C 618, Class C or Class F, sand meeting the requirements of ASTM C 144, a chemical to produce a non-shrink grout and water. The grout mixture shall be designed with a maximum water cementitious ratio by weight of 0.60 and a minimum strength of 2000 psi. The admixture to produce a non-shrink grout shall be added according to the manufacturer's instruction.

2.2 CONCRETE MIXTURE. The concrete shall meet the following requirements: Slump 5-7 inches, Air Content 4-7%, w/c not less than 0.55, and strength not less than 2500 psi.

2.3 GROUT EQUIPMENT. All grouting equipment used shall be a type, capacity, and mechanical condition suitable for doing the work. The grout equipment shall be capable of supplying, mixing, stirring, and pumping the grout to the satisfaction of the Contracting Officer. An air or gasoline driven, progressing-cavity type pump capable of delivering sanded grout mixtures shall be provided. A mechanical, grout mixer, capable of effectively mixing and stirring a sanded grout shall be provided. The mixer shall be equipped with a disc-type water meter. The water meter shall be calibrated to read in cubic feet and tenths, shall include a direct reading totalizer, shall be designed so that after each delivery the hands can be conveniently set back to zero, and shall have a minimum 6-inch vertical dial. An identical stand-by meter in good operating condition shall be on the site at all times. In lieu of mixing the grout on site the grout may be supplied by a ready mix plant meeting the requirements of ASTM C 94. A mechanically agitated holding tank, so designed as to be capable of effectively stirring and holding in homogeneous suspension all solid matter contained in the grout, shall be provided.

2.4 ACCESSORIES. Such valves, pressure gages, pressure hose, small tools, and accessories as may be necessary to provide a continuous supply of grout and pressure control shall be provided. The inside diameter of the delivery line shall be such that objectionable settlement of solid matter will not take place when pumping at the minimum discharge capacity of the pump. All bends in the delivery line shall be made with a gentle radius, not abrupt.

PART 3 EXECUTION

3.1 PARTIAL REMOVAL OF PIPE AT ENDS OF ABANDONED PIPE. The Contractor shall remove a portion of each of the two culvert pipes and the septic line pipe at the discharge side of the levee (approx. 6'-8') and clean, plug and grout the pipe as described below. The Contractor shall restore the levee toe and levee slope using impervious material while using the Benching Detail shown on the drawings. The Contractor shall remove sufficient pipe on the inlet side of two culvert pipes and the septic line pipe to install the

collector pipes and/or manholes, and clean, plug and grout the pipe as described below.

3.2 DRAIN PIPE CLEANING. The drain pipe shall be thoroughly cleaned prior to grouting to remove all debris, solids, roots, deposits, and other matter which would preclude proper placement of the grout. The Contractor shall remove as much as possible of the solid material using a mechanical method. The solid material shall be disposed of off site in accordance with all local, state, and federal laws.

The Contractor shall then use a hydraulic jet with a minimum nozzle pressure of 600 psi, or other method as approved by the Contracting Officer's Representative, to finish cleaning the pipe. All water volumes will be kept to the minimum amount possible to attain a clean contact surface for the grouting. Water used for flushing and cleaning pipes shall be maintained by the contractor to comply with regulatory agencies having jurisdiction regarding erosion protection and sediment control procedures for storm water discharge. All water shall be removed prior to placement of grout.

3.3 GROUTING DRAIN PIPE. Grouting shall be considered complete when grout has vented a minimum of 2 feet above the pipe. Grouting shall be accomplished from the outlet side of the drain pipe to the maximum extent possible. If the Contractor is unable to complete the grouting from the outlet end, the grouting operation shall be completed from the landside inlet at the discretion of the Contracting Officer. Bulkheads will be required to contain the grout. The bulkheads shall remain in place after grouting is completed. The methods the Contractor proposes for grouting, including location of the grout plant and type of bulkheads, shall be furnished to the Contracting Officer. The end of the grout line shall extend the entire distance of the pipe and shall be kept imbedded in fresh grout as the line is withdrawn from the pipe.

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SECTION 02 21 40 - CARE OF WATER

PART 1 GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, material, and equipment and performing all operations required for designing, furnishing, installing, testing, operating, maintaining and removing a system to control surface water within the construction limits.

1.2 QUALITY CONTROL.

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

(1) Surface Water Removal. Design, submittal of plan, installation, adequacy, operation, maintenance and removal of surface water control systems.

(2) Subsurface Water Removal. Design, submittal of plan, installation, adequacy, operation, maintenance and removal of subsurface water control systems.

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

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 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Statements. Care of Water Plan; GA. Submit complete details of proposed subsurface and surface water removal plan within 15 days following Notice to Proceed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL. All work shall be performed in "in the dry" (free of water) conditions to construct the relief well collector and discharge piping, with the exception of rip rap placement at the system discharge. The work for the construction of relief well manholes and discharge piping includes but shall not be limited to: excavation, placement of pipe bedding material, reinforced concrete manhole installation, reinforced concrete pipe (RCP) installation, pipe backfill, and collector system backfill under this contract except as otherwise specified. The care of water shall be accomplished by sequencing the construction, grading the areas around the excavation limits with swales, trenching, damming, storm drain diversion, cofferdams, and other necessary installations, and surface water runoff from flowing into the excavations and pipe installation work areas.

3.2 SURFACE WATER CONTROL. The Contractor shall provide and operate a system(s) that consists of either one or a combination of the following but not be limited to: pumps, sumps, suction, and discharge lines to remove surface water from within the excavations due to rainwater, surface drainage, and seepage. The Contractor shall control groundwater seepage, seepage

through any embankment and upward seepage from the bottom of the excavations.

3.3 FLOODING. The Contractor shall suspend construction on the relief well collector system and discharge piping north of manhole "MH-9" if the water within the Missouri River is forecasted to meet or exceed elevation 438.1 feet NGVD at the St. Charles, Missouri gage in the upcoming 24-hours. Before suspending work due to a high water event, the Contractor shall fill any open ditching with previously excavated material as directed by the Contracting Officer. In the event of damage to portions of the completed permanent work caused by flooding, an equitable adjustment will be made to the contract price and duration as described in Special Clause 00 08 00-6.

3.4 DISCHARGE. Flows from the surface water and subsurface water control system(s) shall be discharged into the master ditch, south of the work area, via the relief well system discharge piping. This discharge shall not erode, scour or otherwise damage any completed work or existing ditch slope. The Contractor shall protect any excavated or improved ground surface from being eroded from the pump discharge.

3.5 CARE OF WATER PLAN. Before starting installation of any Care of Water Plan, the Contractor shall prepare and submit to the Contracting Officer a detailed plan, including equipment and materials to be used and the sequence of operation for care of water. The Contractor's plan shall include complete details of proposed surface water control, including but not necessarily limited to all cofferdams, sumps, sump pumps, ditches or other work necessary to keep the work areas drained. The Contracting Officer's review of the proposed plan will not relieve the Contractor of its responsibility to provide a plan adequate to accomplish the desired results.

3.6 MAINTENANCE AND SERVICING. The Contractor shall be responsible for the maintenance, servicing, and repairs of the surface water control system during the life of the contract. Maintenance, servicing, and repair operations are not cause for relaxation of the specified surface water control requirements.

3.7 CONTROL OF WATER WITHIN THE EXCAVATIONS. The Contractor shall keep all excavations free of water at the Contractor's own expense. The Contractor shall provide all dams, channels, sumps, or other works necessary to keep the excavation entirely clear of water and shall provide and operate pumps or other suitable equipment of adequate capacity for pumping out the excavations. Soil which becomes soft as a result of improper drainage shall be removed and replaced with pervious material at the Contractor's own expense to maintain a firm dry excavation bottom and base. Pipe bedding, laying, jointing, and the placing of concrete or masonry shall be accomplished in a water-free trench or excavation, which shall be kept clear of water until pipe joints, concrete and masonry have set and are resistant to water damage. The water shall be disposed of in a manner approved by the Contracting Officer.

-END OF SECTION-

03 31 01.4

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SECTION 03 31 01 - FORMWORK FOR CONCRETE

PART 1 GENERAL

1.1 SCOPE. This section covers the materials and workmanship required for formwork of concrete structures and appurtenant items.

1.2 QUALITY CONTROL.

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

- (1) Design
- (2) Materials
- (3) Installation
- (4) Coating
- (5) Removal
- (6) Chamfered edges.

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

1.3 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Concrete Institute (ACI).

347

Guide to Formwork for Concrete

1.3.2 U.S. Department of Commerce, National Institute of Standards and Technology (NIST).

PS 1

Construction and Industrial Plywood

1.4 DESIGN REQUIREMENTS. The design, engineering, and construction of the formwork shall be the responsibility of the Contractor. The formwork shall be designed for anticipated live and dead loads and shall comply with the tolerances and surface requirements specified in SECTION 03300 - CAST-IN-PLACE STRUCTURAL CONCRETE. However, for surfaces with an ACI Class A surface designation, the allowable deflection for facing material between studs, for studs between walers and walers between bracing shall be limited to 0.0025 times the span. The formwork shall be designed as a complete system with consideration given to the effects of cementitious materials and mixture additives such as cement type, plasticizers, accelerators, retarders, air

entrapment, and others. The adequacy of formwork design and construction shall be monitored prior to and during concrete placement as part of the Contractor's approved Quality Control Plan.

1.5 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 to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES:

1.5.1 Drawings. Shop Drawings; GA. Submit drawings and design computations for all formwork required for review at least 45 days either before fabrication on site or before delivery of prefabricated forms. The drawing and data submitted shall include the type, size, quantity, and strength of all materials of which the forms are made, the plan for jointing of facing panels, details affecting the appearance, and the assumed design values and loading conditions. Design computations and drawings shall be stamped by a registered professional engineer.

1.5.2 Data. Manufacturer's Literature; FIO. Manufacturer's literature shall be submitted for plywood, concrete form hard board, form accessories, prefabricated forms, form coating.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Forms and Form Liners. Forms and form liners shall be fabricated with facing materials that will produce a finish meeting the construction tolerance and surface requirements specified in SECTION 03 33 01 and the following surface classifications as defined in ACI 347R.

2.1.1.1 Class "D" Finish. This class of finish shall apply to formed surfaces. The form facing may be of wood or steel.

2.1.1.2 Form Coating. Form coating shall be a commercial formulation that will not bond with, stain, cause deterioration, or any other damage to concrete surfaces. The coating shall not impair subsequent treatment of concrete surfaces depending upon bond or adhesion nor impede the wetting of surfaces to be cured with water or curing compounds. If special form liners are to be used, the Contractor shall follow the recommendation of the form coating manufacturer.

2.1.2 Accessories. Ties and other similar form accessories to be partially or wholly embedded in the concrete shall be of a commercially manufactured type. After the ends or end fasteners have been removed, the embedded portion of metal ties shall terminate not less than 2 inches from any concrete surface either exposed to view or exposed to water. Removable tie rods shall not be allowed. Plastic snap ties may be used in locations where the surface will not be exposed to view. Form ties shall be constructed so that the ends or end fasteners can be removed without spalling the concrete.

PART 3 EXECUTION

3.1 INSTALLATION.

3.1.1 Form Construction. Forms shall be constructed true to the structural design and required alignment. The form surface and joints shall be mortar tight and supported to achieve safe performance during construction, concrete placement, and form removal. The Contractor shall continuously monitor the alignment and stability of the forms during all phases to assure the finished product will meet the surface requirements and tolerances specified in SECTION 03 33 00. Failure of any supporting surface either due to surface texture, deflection or form collapse shall be the responsibility of the Contractor as will the replacement or correction of unsatisfactory surfaces. When forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the completed surface so as to obtain accurate alignment of the surface and to prevent leakage of mortar. Forms shall not be re-used if there is any evidence of surface defects that would impair the quality of the resulting concrete surface. All surfaces of used forms shall be cleaned of mortar and any other foreign material before reuse.

3.1.2 Chamfering. All exposed joints, edges, and external corners shall be chamfered by molding placed in the forms unless the drawings specifically state that chamfering is to be omitted or as otherwise specified.

3.1.3 Coating. Forms for exposed surfaces shall be coated with form oil or a form-release agent before the form or reinforcement is placed in final position. The coating shall be used as recommended in the manufacturer's instructions. Forms for unexposed surfaces may be wet with water in lieu of coating immediately before placing concrete, except that, in cold weather when freezing temperatures are anticipated, coating shall be mandatory. Surplus coating on form surfaces and coating on reinforcing steel and construction joints shall be removed before placing concrete.

3.2 FORM REMOVAL. Forms shall not be removed without approval of the Contracting Officer. The minimum time required for concrete to reach a strength adequate for removal of formwork without risking the safety of workers or the quality of the concrete depends on a number of factors including, but not limited to, ambient temperature, concrete lift heights, type and amount of concrete admixture, and type and amount of cementitious material in the concrete. It is the responsibility of the Contractor to consider all applicable factors and leave the forms in place until it is safe to remove them. In any case, forms shall not be removed unless the minimum time requirements specified in paragraph Formwork Not Supporting Weight of Concrete, below, are met, except as otherwise directed or specifically authorized. When conditions are such as to justify the requirement, forms will be required to remain in place for a longer period. All removal shall be accomplished in a manner that will prevent damage to the concrete and ensure the complete safety of the structure. Where forms support more than one element, the forms shall not be removed until the form removal criteria are met by all supported elements. Form removal shall be scheduled so that all necessary repairs can be performed as specified in SECTION 03 33 01.

3.2.1 Formwork Not Supporting Weight of Concrete. Formwork for walls, columns, sides of beams, gravity structures, and other vertical type forms

not supporting the weight of concrete shall not be removed in less than 24 hours after concrete placement is completed.

3.3 INSPECTION Forms and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify to the Contracting Officer that they are ready to receive concrete. The results of each inspection shall be reported in writing.

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SECTION 03 32 00 - CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all equipment, materials, and labor, for providing and placing steel bars and accessories for concrete reinforcement as specified herein and as shown on the drawings.

1.2 QUALITY CONTROL.

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

- (1) Materials.
- (2) Installation.

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

1.3 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Concrete Institute (ACI).

ACI 315	Details and Detailing of Concrete Reinforcement
ACT 318/318R	Building Code Requirements for Structural Concrete

1.3.2 American Society for Testing and Materials (ASTM).

A 370	Mechanical Testing of Steel Products
A 615/A 615M	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

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 to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES:

1.4.1 Drawings. Shop Drawings; GA. Submit shop drawings showing reinforcement steel placement; reinforcement steel schedules including quantity, size, shape, dimensions, weight per foot, total weights and bending details; and details of bar supports showing types, sizes, spacing and sequence.

1.4.2 Reports. Test Records; FIO. Certified tests reports of reinforcement steel showing that the steel complies with the applicable

specifications shall be furnished for each steel shipment and identified with specific lots prior to placement. Three copies of the heat analyses shall be provided for each lot of steel furnished and the Contractor shall certify that the steel conforms to the heat analyses.

1.4.3 Records. Disposition Records; FIO. A system of identification which shows the disposition of specific lots of approved materials in the work shall be established and submitted before completion of the contract.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Steel Bars. Steel bars shall comply with the requirements of ASTM A 615, Grade 60, deformed steel, of the sizes and lengths shown on the drawings.

2.1.2 Accessories.

2.1.2.1 Bar Supports. Bar supports shall comply with the requirements of ACI 315. Supports for bars in concrete with formed surfaces exposed to view or to be painted shall be plastic-coated wire or stainless steel.

2.1.2.2 Wire Ties. Wire ties shall be 16-gage or heavier black annealed wire.

PART 3 EXECUTION

3.1 TESTING. The Contractor shall have material tests required by applicable standards and specified herein performed by an approved laboratory and certified to demonstrate that the materials are in conformance with the specifications. Tests shall be performed and certified at the Contractor's expense.

3.1.1 Reinforcement Steel Tests. Mechanical testing of steel shall be in accordance with ASTM A 370 except as otherwise specified herein or required by the material specifications. Tension tests shall be performed on full cross-section specimens using a gage length that spans the extremities of specimens with welds or sleeves included. Chemical analyses of steel heats shall show the percentages of carbon, phosphorous, manganese, sulfur and silicon present in the steel.

3.2 FABRICATION AND PLACEMENT. Reinforcement steel and accessories shall be fabricated and placed as specified and shown on contract drawings and approved shop drawings. Fabrication and placement details of steel and accessories not specified or shown on the drawings shall be in accordance with ACI 315 and ACI 318 or as directed by the Contracting Officer. Steel shall be fabricated to shapes and dimensions shown, placed where indicated within specified tolerances and adequately supported during concrete placement. At the time of concrete placement all steel shall be free from loose, flaky rust, scale (except tight mill scale), mud, oil, grease or any other coating that might reduce the bond with the concrete.

3.2.1 Hooks and Bends. Steel bars shall be mill or field-bent. All steel shall be bent cold unless authorized by the Contracting Officer. No steel bars shall be bent after being partially embedded in concrete unless indicated on the drawings or authorized by the Contracting Officer.

3.2.2 Placing Tolerances.

3.2.2.1 Spacing. The spacing between adjacent bars and the distance between layers of bars may not vary from the indicated position by more than one bar diameter nor more than 1 inch.

3.2.2.2 Concrete Cover. The minimum concrete cover of main reinforcement steel bars shall be as shown on the drawings. The allowable variation for minimum cover shall be as follows:

<u>MINIMUM COVER</u>	<u>VARIATION</u>
6"	+ 1/2"
4"	+ 3/8"
3"	+ 3/8"
2"	+ 1/4"
1-1/2"	+ 1/4"
1"	+ 1/8"
3/4"	+ 1/8"

3.2.3 Splicing. Splices in steel bars shall be made only as required. Bars may be spliced at alternate or additional locations at no additional cost to the Government subject to the approval of the Contracting Officer.

3.2.3.1 Lap Splices. Lap splices shall be used for all splices. Lapped bars may be placed in contact and securely tied or spaced transversely apart to permit the embedment of the entire surface of each bar in concrete. Lapped bars shall not be spaced farther apart than 1/5 the required length of lap nor 6 inches.

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SECTION 03 32 50
EXPANSION AND CONTRACTION JOINTS IN CONCRETE

PART 1 GENERAL

1.1 SCOPE. This section covers the materials, techniques and workmanship requirements for forming expansion and contraction construction joints in concrete structures.

1.2 QUALITY CONTROL.

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

- (1) Materials.
- (2) Fabrication and placement.

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

1.3 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

C 920	Elastomeric Joint Sealants
D 1752	Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

1.4 QUALITY ASSURANCE.

1.4.1 Delivery and Storage. Material delivered and placed in storage shall be stored off the ground and protected from moisture, dirt, and other contaminants.

1.4.2 Materials Tests.

1.4.2.1 Field-Molded Sealants. Samples of sealant and primer, when use of primer is recommended by the manufacturer, as required in PART 2, paragraph Field Molded Sealants and Primer below may be tested by and at the expense of the Government for compliance with ASTM C 920. If the sample fails to meet specification requirements, new samples shall be provided and the cost of retesting will be deducted from payments due the Contractor at a rate of \$500.00 per sample.

1.5 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The Contractor shall submit the following to the Contracting Officer in

accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.5.1 Reports. Expansion Joint Filler and Sealants, GA. Certified manufacturer's test reports and compliance certificates shall be provided for premolded expansion joint filler strips and sealants to verify compliance with the applicable specification.

1.5.2 Samples. FIO.

1.5.2.1 Field-Molded Sealant and Primer. One gallon of field-molded sealant and one quart of primer (when use of primer is recommended by the sealant manufacturer) shall be provided for testing, as directed by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Expansion Joint Filler Strips. Premolded to conform to ASTM D 1752, Type I sponge rubber.

2.1.2 Joint Sealants and Seals.

2.1.2.1 Field Molded Sealants and Primer. Field molded sealants and primer shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for all joints. Bond breaker material shall be polyethylene tape, coated paper, metal foil or similar type materials. The back-up material shall be compressible, nonshrink, nonreactive with sealant, and nonabsorptive material type such as extruded butyl or polychloroprene foam rubber.

PART 3 EXECUTION

3.1 INSTALLATION. Joint locations and details, including materials and methods of installation of joint fillers, shall be as specified, shown on the drawings and as directed. In no case shall any fixed metal be continuous through an expansion or contraction joint, except as shown on the drawings.

3.1.1 Joints with Premolded Filler. Premolded filler strips shall have oiled wood strips secured to the top thereof and shall be accurately positioned and secured against displacement to clean, smooth concrete surfaces. The wood strips shall be slightly tapered, dressed and of the size required to install filler strips at the desired level below the finished concrete surface and to form the groove for the joint sealant or seals to the size shown. Material used to secure premolded fillers and wood strips to concrete shall not harm the concrete and shall be compatible with the joint sealant or seals. The wood strips shall not be removed until after the concrete curing period. The groove shall be thoroughly cleaned of all laitance, curing compound, foreign materials, protrusions of hardened concrete and any dust which shall be blown out of the groove with oil-free compressed air.

3.1.2 Joints With Field-Molded Sealant. 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. The joints shall be dry prior to filling with sealant. Bond breaker and back-up material shall be installed where required. If primer is recommended for use by the sealant manufacturer on the substrates to which sealant is to be applied, it shall be applied in the manner and at the rate recommended by the manufacturer. Sealant shall be applied after priming within the sealant manufacturer's recommended time

limits. Joints shall be filled flush with joint sealant in accordance with the manufacturer's recommendations.

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SECTION 03 33 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all material and equipment and performing all labor for the manufacturing, transporting, placing, finishing, curing and protection of concrete included in these specifications and as shown on the drawings.

1.2 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.2.1 American Concrete Institute (ACI).

- | | |
|-------|---|
| 211.1 | Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete |
| 214 | Recommended Practice for Evaluation of Strength Test Results of Concrete |

1.2.2 American Society for Testing and Materials (ASTM).

- | | |
|-------------|---|
| C 31 | Making and Curing Concrete Test Specimens in the Field |
| C 33 | Concrete Aggregates |
| C 39 | Compressive Strength of Cylindrical Concrete Specimens |
| C 42 | Obtaining and Testing Drilled Cores and Sawed Beams of Concrete |
| C 70 | Surface Moisture of Fine Aggregate |
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| C 109/C109M | Compressive Strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens) |
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| C 192 | Making and Curing Concrete Test Specimens in the Laboratory |

C 231	Air Content of Freshly Mixed Concrete by the Pressure Method
C 260	Air-Entraining Admixtures for Concrete
C 309	Liquid Membrane-Forming Compounds for Curing Concrete
C 494	Chemical Admixtures for Concrete
C 566	Total Evaporable Moisture Content of Aggregate by Drying
C 595	Blended Hydraulic Cements
C 597	Pulse Velocity Through Concrete
C 618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
C 803/C 803M	Penetration Resistance of Hardened Concrete
C 805	Rebound Number of Hardened Concrete
C 1064	Temperature of Freshly Mixed Portland Cement Concrete
C 1077	Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
C 1107	Packaged Dry, Hydraulic-Cement Grout, (Nonshrink)
D 75	Sampling Aggregates

1.2.3 National Ready-Mixed Concrete Association (NRMCA).

NRMCA CPMB 100	Concrete Plant Standards
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1.2.4 National Institute of Standards and Technology (NIST).

Handbook 44	Specifications, Tolerance and Other Technical Requirements for Weighing and Measuring Devices
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1.2.5 U.S. Army Corps of Engineers Handbook for Cement and Concrete (CRD).

CRD-C 104	Calculation of Fineness Modulus of Aggregate
CRD-C 143	Meters for Automatic Indication of Moisture in Fine Aggregate

CRD-C 400	Requirements for Water for Use in Mixing or Curing Concrete
CRD-C 521	Standard Test Method for Frequency and Amplitude of Vibrators for Concrete

1.3 TESTING AND SAMPLING.

1.3.1 Air-Entraining Admixture or other chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the Contractor when directed by the Contracting Officer and shall be rejected if test results are not satisfactory.

1.3.2 Construction Testing by Government. The Government may sample and test aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary for procurement of representative test samples. Samples of aggregates shall 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 ASTM C 143 and ASTM C 231, respectively. Compression test specimens will be made and field or laboratory cured in accordance with ASTM C 31, and compression test specimens tested in accordance with ASTM C 39. Testing of grout shall be in accordance with ASTM C 109.

1.3.3 Construction Testing by the Contractor. Tests and inspections shall be performed as specified in paragraph TESTS AND INSPECTION.

1.4 EVALUATION AND ACCEPTANCE.

1.4.1 Concrete Strength. The strength of the concrete will be considered satisfactory so long as the average of all sets of three consecutive test results equals or exceeds the required strength $f'c$ at the specified time directed herein. Additional analysis or testing may be required at the Contractor's expense when the strength of the concrete in the structure is considered potentially deficient.

1.4.1.1 Investigation of Low-Strength Test Results. When any strength test of standard-cured test cylinders falls below the specified strength requirement or if tests of field-cured cylinders indicate deficiencies in protection, curing or strength at the specified times for interim periods, steps shall be taken to assure that the load-carrying capacity of the structure is not jeopardized. Nondestructive testing in accordance with ASTM C 597, ASTM C 803, or ASTM C 805 may be permitted by the Contracting Officer to determine the relative strengths at various locations in the structure as an aid in evaluating concrete strength in place or for selecting areas to be cored. Such tests, unless properly calibrated and correlated with other test data, shall not be used as a basis for acceptance or rejection.

1.4.1.2 Testing of Cores. When the strength of concrete in place is considered potentially deficient, cores shall be obtained and tested in accordance with ASTM C 42. At least three representative cores shall be taken from each member or area of concrete in place that is considered potentially deficient. The location of cores will be determined by the Contracting Officer to least impair the strength of the structure. If the concrete in the structure will be dry under service conditions, the cores shall be air dried (temperature 60° to 80° F., relative humidity less than 60 percent) for 7 days

before testing and shall be tested dry. If the concrete in the structure will be more than superficially wet under service conditions, the cores shall be tested after moisture conditioning in accordance with ASTM C 42. Concrete in the area represented by the core testing will be considered adequate if the average strength of the cores is equal to at least 85 percent of the specified strength requirement and if no single core is less than 75 percent of the specified strength requirement.

1.4.2 Surface Requirements. The surface requirements for the classes of finish required by SECTION 03 31 01 - FORMWORK FOR CONCRETE shall be as hereinafter specified. Allowable irregularities are designated "abrupt" or "gradual" for purposes of providing for surface variations. Offsets resulting from displaced, misplaced, or mismatched forms, or sheathing, or by loose knots in sheathing, or other similar form defects, shall be considered "abrupt" irregularities. Irregularities resulting from warping, unplaneness, or similar uniform variations from planeness, or true curvature, shall be considered "gradual" irregularities. "Gradual" irregularities will be checked for compliance with the prescribed limits with a 5-foot template, consisting of a straightedge for plane surfaces and a shaped template for curved or warped surfaces. In measuring irregularities, the straightedge or template may be placed anywhere on the surface in any direction, with the testing edge held parallel to the intended surface.

1.4.3 Appearance. Permanently exposed surfaces shall be cleaned, if stained or otherwise discolored, by a method that does not harm the concrete and that is approved by the Contracting Officer.

1.5. SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The Contractor shall submit the following to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.5.1 Statements. Concrete Mix Proportions; GA.

1.5.1.1 Concrete mixture proportions for all concrete shall be determined by the Contractor, in accordance with the requirements in paragraph MIXTURE PROPORTIONING, and submitted for approval. The proportions of all ingredients and nominal maximum coarse aggregate size that will be used in the manufacture of each quality of concrete shall be stated. Proportions shall indicate the weight of cementitious material, the percentage of entrained air, and water; the weights of aggregates in a saturated surface-dry condition; and the quantities of admixtures. The submission shall be accompanied by test reports from a laboratory complying with ASTM C 1077, which show that proportions thus selected will produce concrete of the qualities indicated. No substitution shall be made in the source or type of materials used in the work.

1.5.2 Certificates and Test Reports. Cementitious Material, Non-Shrink Grout, Admixtures, Curing Compounds; FIO.

1.5.2.1 Cementitious Material. Cementitious material will be accepted on the basis of the manufacturer's certification of compliance, accompanied by mill test reports that materials meet the requirements of the specification under which they are furnished. Certification and mill test reports shall identify the particular lot furnished.

1.5.2.2 Non-shrink Grout.

1.5.2.2.1 General. 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. The literature shall also certify that the non-shrink grout will meet the specified strength within the specified time. Non-shrink grout containing metallic aggregate will not be permitted.

1.5.2.2.2 Non-shrink Grout. Non-shrink grout shall conform to ASTM C 1107 and shall be a commercial formulation suitable for the application proposed.

1.5.2.3 Air-Entraining Admixture and Other Chemical Admixtures shall be certified for compliance with all specification requirements.

1.5.2.4 Curing Compound shall be certified for compliance with all specification requirements.

1.5.3 Data. Review of Plant, Equipment, and Methods; FIO.

1.5.3.1 Batch Plant. Details of the data on concrete plant shall be submitted for conformance with paragraphs Capacity and Batching Plant.

1.5.3.2 Mixers. The make, type, and capacity of concrete mixers proposed for mixing concrete shall be submitted for conformance with paragraphs Capacity and Mixers. The results of the mixer uniformity tests as required in paragraph Mixers shall be submitted at least 5 days prior to the initiation of placing.

1.5.3.3 Conveying Equipment. The methods and equipment for transporting, handling, and depositing the concrete shall be submitted for conformance with paragraphs Capacity and CONVEYING EQUIPMENT.

1.5.3.4 Placing. All placing equipment and methods shall be submitted for conformance with paragraphs Capacity and PLACING.

1.5.3.5 Joint Cleanup. The method and equipment proposed for joint cleanup and waste disposal shall be submitted for conformance with paragraph Construction Joint Treatment.

1.5.3.6 Curing. The curing medium and methods to be used shall be submitted for conformance with paragraph CURING AND PROTECTION.

1.5.4 Statements. Placement Procedures; GA.

1.5.4.1 Cold-Weather Requirements. If concrete is to be placed under cold-weather conditions, the proposed materials, methods, and protection meeting the requirements of paragraphs Cold-Weather Placing and Cold Weather shall be submitted.

1.5.4.2 Hot-Weather Requirements. If concrete is to be placed under hot-weather conditions, the proposed materials and methods meeting the requirements of paragraphs Hot-Weather Placing and General shall be submitted.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Cementitious Materials shall be portland cement or portland-pozzolan cement and shall conform to appropriate specifications listed below.

2.1.1.1 Portland Cement. ASTM C 150, Type I or II except that the maximum amount of C3A in Type I cement shall be 15 percent including false set requirements.

2.1.1.2 Portland-Pozzolan Cement. ASTM C 595, Type IP.

2.1.1.3 Pozzolan. Pozzolan shall conform to ASTM C 618, Class C, with the optional requirements for Table 2A.

2.1.2 Aggregates. Fine and coarse aggregates shall conform to the requirements of ASTM C 33. The nominal maximum size of coarse aggregate shall be as listed in paragraph Nominal Maximum-Size Coarse Aggregate. Where the use of highway department gradations are permitted, proposed gradations shall be submitted for approval. Coarse aggregate shall consist of crushed limestone.

2.1.3 Admixtures to be used, when required or permitted, shall conform to the appropriate specification listed below:

2.1.3.1 Air-Entraining Admixture. ASTM C 260.

2.1.3.2 Water-Reducing Admixtures. ASTM C 494, Type A, B, C, D, or E. The use of a chloride accelerating admixture will not be permitted.

2.1.3.3 High-Range Water Reducer. ASTM C 494, Type F or G. The admixture may be used only when approved by the Contracting Officer, such approval being contingent upon particular mixture control as described in the Contractor's Quality Control Plan.

2.1.4 Membrane-Forming Curing Compound. ASTM C 309, Type 1-D or 2. Nonpigmented compound shall contain a fugitive dye.

2.1.5 Water for mixing and curing shall be fresh, clean, drinkable, and free of injurious amounts of oil, acid, salt, or alkali, except that undrinkable water may be used if it meets the requirements of CRD-C 400.

2.1.6 Nonshrink Grout. Nonshrink grout shall conform to ASTM C 1107 and shall be a commercial formulation suitable for the application proposed.

2.2 MIXTURE PROPORTIONING.

2.2.1 Strength. Specified compressive strength f'_c shall be as follows:

COMPRESSIVE STRENGTH (PSI)

4,000 @ 28 days

Cast in Place Concrete

2.2.2 Maximum Water-Cement (W/C) Ratio. Maximum W/C by mass for structural concrete shall be 0.45 with a minimum cementitious material content of 500 lbs.

2.2.3 Nominal Maximum-Size Coarse Aggregate shall be 1 inch.

2.2.4 Air Content as determined by ASTM C 231 shall be between 4 and 7 percent.

2.2.5 Slump. The slump shall be determined in accordance with ASTM C 143 and shall be within the range of 1 to 4 inches. Where placement by pump is approved, the slump shall not exceed 6 inches and shall remain within a 3-inch band.

2.2.6 Concrete Proportioning. Trial design batches and testing requirements for the concrete specified shall be the responsibility of the Contractor. Samples of approved aggregates shall be obtained in accordance with the requirements of ASTM D 75. Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by the manufacturer's test reports indicating compliance with applicable specified requirements. Trial mixtures having proportions, consistencies, and air content suitable for the work shall be made based on methodology described in ACI Standard 211.1, using at least three different water-cement ratios, which will produce a range of strengths encompassing that required for the work. The target water-cement ratio required in paragraph Maximum Water-Cement (W/C) Ratio shall be converted to a weight ratio of water to cement plus pozzolan by mass as described in ACI Standard 211.1. The minimum pozzolan content shall be 15 percent and the maximum shall be 25 percent of the total cementitious material. Trial mixtures shall be designed for maximum permitted slump and air content. The temperature of concrete in each trial batch shall be reported. For each water-cement ratio, at least three test cylinders for each test age shall be made and cured in accordance with ASTM C 192. The test cylinders shall be tested at 1 hour, 3 days, and 28 days in accordance with ASTM C 39. From these test results, a curve shall be plotted showing the relationship between water-cement ratio and strength.

PART 3 EXECUTION

3.1 PRODUCTION EQUIPMENT.

3.1.1 Capacity. The batching and mixing equipment shall have a capacity of at least 50 cubic yards per hour.

3.1.2 Batching Plant. The batching plant shall conform to the requirements of NRMCA CPMB 100, Concrete Plant Standards and as specified; however, rating plates attached to batch plant equipment are not required.

3.1.2.1 Equipment. The batching controls shall be partially automatic, semiautomatic, or automatic. The semiautomatic batching system shall be provided with interlocks such that the discharge device cannot be actuated until the indicated material is within the applicable tolerance. The batching system shall be equipped with an accurate recorder or recorders that meet the requirement of NRMCA CPMB 100. Separate bins or compartments shall be provided for each size group of aggregate and cement. Aggregates shall be weighed either in separate weigh batchers with individual scales or cumulatively in one weigh batcher on one scale. Aggregate shall not be weighed in the same batcher with cement. If measured by weight, water shall not be weighed cumulatively with another ingredient. Water batcher filling and discharging valves shall be so interlocked that the discharge valve cannot be opened before the filling valve is fully closed. An accurate mechanical device for measuring and dispensing each admixture shall be provided. Each dispenser shall be interlocked with the batching and discharging operation of the water so that each admixture is separately batched and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Admixtures shall not be combined prior to

introduction in water or sand. The plant shall be arranged so as to facilitate the inspection of all operations at all times. Suitable facilities shall be provided for obtaining representative samples of aggregates from each bin or compartment.

3.1.2.2 Scales. The weighing equipment shall conform to the applicable requirements of Department of Commerce (NIST) Handbook 44, except that the accuracy shall be plus or minus 0.2 percent of scale capacity. The Contractor shall provide standard test weights and any other auxiliary equipment required for checking the operating performance of each scale or other measuring devices. The tests shall be made at the frequency required in paragraph Scales and in the presence of the Government.

3.1.2.3 Batching Tolerances.

3.1.2.3.1 Weighing Tolerances. Whichever of the following tolerances is greater shall apply, based on required scale reading.

<u>Material</u>	<u>Percent of Required Weight</u>	<u>Percent of Scale Capacity</u>
Cement	+ 1	+ 0.3
Aggregate	+ 2	+ 0.3
Water	+ 1	+ 0.3
Admixture	+ 3	+ 0.3

3.1.2.3.2 Volumetric Tolerances. For volumetric batching equipment, the following tolerances shall apply to the required volume of material being batched:

Water: Plus or minus 1 percent.

Admixtures: Plus or minus 3 percent.

3.1.2.4 Moisture Control. The plant shall be capable of ready adjustment to compensate for the varying moisture content of the aggregates and to change the weights of the materials being batched. An electric moisture meter complying with the provisions of CRD-C 143 shall be provided for measuring moisture in the fine aggregate. The sensing element shall be arranged so that the measurement is made near the batcher charging gate of the sand bin or in the sand batcher.

3.1.3 Mixers.

3.1.3.1 General. The mixers shall not be charged in excess of the capacity recommended by the manufacturer. The mixers shall be operated at the drum or mixing blade speed designated by the manufacturer. The mixers shall be maintained in satisfactory operating condition, and the mixer drums shall be kept free of hardened concrete. Should any mixer at any time produce unsatisfactory results, its use shall be promptly discontinued until it is repaired.

3.1.3.2 Concrete Plant Mixers shall be tilting, nontilting, horizontal-shaft, or vertical-shaft type, and shall be provided with an acceptable device to lock the discharge mechanism until the required mixing time has elapsed. The mixing time and uniformity shall conform to all the paragraphs in ASTM C 94 applicable to central-mixed concrete.

3.1.3.3 Truck Mixers. Truck mixers, the mixing of concrete therein,

and concrete uniformity shall conform to the requirements of ASTM C 94. A truck mixer may be used either for complete mixing (transit-mixed) or to finish the partial mixing accomplished in a stationary mixer (shrink-mixed). Each truck shall be equipped with counters from which it will be possible to determine the number of revolutions at mixing speed and the number of revolutions at agitating speed.

3.2 CONVEYING EQUIPMENT.

3.2.1 General. The conveying equipment shall have a capacity of at least 50 cubic yards per hour. Concrete shall be conveyed from mixer to forms as rapidly as practicable and within the time interval specified in paragraph Time Interval Between Mixing and Placing and by methods that will prevent segregation or loss of ingredients. Any concrete transferred from one conveying device to another shall be passed through a hopper that is conical in shape and shall not be dropped vertically more than 5 feet, except where suitable equipment is provided to prevent segregation and where specifically authorized.

3.2.2 Buckets. The interior hopper slope shall be not less than 58 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least 5 times the nominal maximum-size aggregate, and the area of the gate opening shall not be less than 2 square feet. The maximum dimension of the gate opening shall not be greater than twice the minimum dimension. The bucket gates shall be essentially grout tight when closed and may be manually, pneumatically, or hydraulically operated except that buckets larger than 2 cubic yards shall not be manually operated. The design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position.

3.2.3 Transfer Hoppers. Concrete may be charged into nonagitating hoppers for transfer to other conveying devices. Transfer hoppers shall be capable of receiving concrete directly from delivery vehicles and have conical-shaped discharge features. The machine shall be equipped with a hydraulically operated gate and with a means of external vibration to effect complete and facile discharge. Concrete shall not be held in nonagitating transfer hoppers more than 30 minutes.

3.2.4 Trucks. Truck mixers operating at agitating speed or truck agitators used for transporting plant-mixed concrete shall conform to the requirements of ASTM C 94. Nonagitating equipment may be used for transporting plant-mixed concrete over a smooth road when the hauling time is less than 15 minutes. Bodies of nonagitating equipment shall be smooth, watertight, metal containers specifically designed to transport concrete, shaped with rounded corners to minimize segregation, and equipped with gates that will permit positive control of the discharge of the concrete.

3.2.5 Chutes. When concrete can be placed directly from a truck mixer, agitator, or nonagitating equipment, the chutes attached to this equipment may be used. A discharge deflector shall be used when required by the Contracting Officer. Separate chutes and other similar equipment shall not be permitted for conveying concrete except when specifically approved.

3.2.6 Belt Conveyors. Belt conveyors may be used when approved. Such conveyors shall be designed and operated to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete at the transfer points and the point of placing. Belt conveyors shall be constructed such that the idler spacing shall not

exceed 36 inches. If concrete is to be placed through installed horizontal or sloping reinforcing bars, the conveyor shall discharge concrete into a pipe or elephant trunk that is long enough to extend through the reinforcing bars. In no case shall concrete be discharged to free fall through the reinforcing bars.

3.2.7 Pump Placement. Concrete may be conveyed by positive displacement pump when approved. The pumping equipment shall be piston or squeeze pressure type. The pipeline shall be rigid steel pipe or heavy-duty flexible hose. The inside diameter of the pipe shall be at least 3 times the nominal maximum-size coarse aggregate in the concrete mixture to be pumped but not less than 4 inches. The maximum-size coarse aggregate shall not be reduced to accommodate the pumps. Any cement grout used to prime the pump shall be wasted outside of forms. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the concrete pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms.

3.3 PREPARATION FOR PLACING.

3.3.1 Embedded Items. Before placement of concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Embedded items shall be free of oil and other foreign matter such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into voids.

3.3.2 Concrete on Earth Foundations. Earth surfaces upon which concrete is to be placed shall be clean, damp, and free from frost, ice, and standing or running water. Prior to placement of concrete, the earth foundation shall have been satisfactorily compacted in accordance with the provisions of SECTION 31 22 00 - EXCAVATION.

3.3.3 Construction Joint Treatment.

3.3.3.1 General. Concrete surfaces to which other concrete is to be bonded shall be prepared for receiving the next lift or adjacent concrete by cleaning with either air-water cutting, sandblasting, high-pressure water jet, or other approved method.

3.3.3.2 Cleaning.

3.3.3.2.1 Air-Water Cutting. Air-water cutting of a construction joint shall be performed at the proper time and only on horizontal construction joints. The surface shall be cut with an air-water jet to remove all laitance and to expose clean, sound, fine aggregate, but not so as to undercut the edges of the larger particles of aggregate. The air pressure used in the jet shall be 100 pounds per square inch plus or minus 10 pounds per square inch, and the water pressure shall be just sufficient to bring the water into effective influence of the air pressure. After cutting, the surface shall be washed and rinsed as long as there is any trace of cloudiness of the wash water. The surface shall again be washed just prior to placing the succeeding lift. Where necessary to remove accumulated laitance, coatings, stains, debris, and other foreign material, sandblasting will be required as the last operation before placing the next lift.

3.3.3.2.2 High-Pressure Water Jet. A stream of water under a pressure of not less than 3,000 pounds per square inch may be used for cleaning. Its use shall be delayed until the concrete is sufficiently hard so that only the surface skin or mortar is removed and there is no undercutting of coarse-aggregate particles. Where the cleaning occurs more than 2 days prior to placing the next lift or where work in the area subsequent to the cleaning causes dirt or debris to be deposited on the surface, the surface shall be cleaned again as the last operation prior to placing the next lift. If the water jet is incapable of a satisfactory cleaning, the surface shall be cleaned by sandblasting.

3.3.3.2.3 Sandblasting. When employed in the preparation of construction joints, sandblasting shall be performed as the final operation completed before placing the following lift. The operation shall be continued until all accumulated laitance, coatings, stains, debris, and other foreign materials are removed. The surface of the concrete shall then be washed thoroughly to remove all loose materials. The surface shall again be washed just prior to placing the succeeding lift.

3.3.3.2.4 Waste Disposal. The method used in disposing of waste water employed in cutting, washing, and rinsing of concrete surfaces shall be such that the waste water does not stain, discolor, or affect exposed surfaces of the structures, or damage the environment of the project area. The method of disposal shall be subject to approval.

3.3.3.2.5 Surface Condition. The surface of the lift shall be damp at the time of placement of the next lift and shall be free of standing water.

3.4 PLACING.

3.4.1 General. The placing equipment shall have a capacity of at least 50 cubic yards per hour. Concrete placement will not be permitted when, in the opinion of the Contracting Officer, weather conditions prevent proper placement and consolidation. Concrete shall be deposited as close as possible to its final position in the forms and, in so depositing, there shall be no vertical drop greater than 5 feet except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it may be effectively consolidated in horizontal layers 1-1/2 feet or less in thickness with a minimum of lateral movement. The amount deposited in each location shall be that which can be readily and thoroughly consolidated. The surfaces of construction joints shall be kept continuously wet for the first 12 hours during the 24-hour period prior to placing concrete. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of cold joints while concrete is being placed.

3.4.2 Time Interval Between Mixing and Placing. Concrete shall be placed within 10 minutes after discharge into nonagitating equipment. When concrete is truck mixed or when a truck mixer or agitator is used for transporting concrete mixed by a concrete plant mixer, the concrete shall be delivered to the site of the work, and discharge shall be completed within 1-1/2 hours after introduction of the cement to the aggregates. When the length of haul makes it impossible to deliver truck-mixed concrete within these time limits, batching of cement and a portion of the mixing water shall be delayed until the truck mixer is at or near the construction site.

3.4.3 Cold-Weather Placing. Concrete shall not be placed without a procedure approved in accordance with paragraph Cold-Weather Requirements when

the concrete is likely to be subjected to freezing temperatures before the expiration of the curing period. The ambient temperature of the space adjacent to the concrete placement and surfaces to receive concrete shall be above 32° F. The placing temperature of the concrete having a minimum dimension less than 12 inches shall be between 55° and 75° F. The placing temperature of the concrete having a minimum dimension greater than 12 inches shall be between 50° and 70° F. Heating of the mixing water or aggregates shall be required to regulate the concrete-placing temperatures. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salt, chemicals, or other materials shall not be mixed with the concrete to prevent freezing.

3.4.4 Hot-Weather Placing. Concrete shall be properly placed and finished with approved procedures in accordance with paragraph Hot-Weather Requirements. The concrete-placing temperature shall not exceed 90° F. Cooling of the mixing water and/or aggregates will be required to obtain an adequate placing temperature. An approved retarder may be used to facilitate placing and finishing. Steel forms and reinforcement shall be cooled prior to concrete placement when steel temperatures are greater than 120° F. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete-placing temperature.

3.4.5 Consolidation. Immediately after placement, each layer of concrete, including flowing concrete, shall be consolidated by internal vibrating equipment. Vibrators shall not be used to transport concrete within the forms. Hand spading may be required if necessary with internal vibrating along formed surfaces permanently exposed to view. Form or surface vibrators shall not be used unless specifically approved. Vibrators of the proper size, frequency, and amplitude shall be used for the type of work being performed in conformance with the following requirements:

<u>Application</u>	<u>Head Diameter</u> <u>Inches</u>	<u>Frequency</u> <u>VPM</u>	<u>Amplitude</u> <u>Inches</u>
Thin walls, beams, etc.	1-1/4 - 2-1/2	9,000 - 13,500	0.02 - 0.04
General construction	2 - 3-1/2	8,000 - 12,000	0.025 - 0.05

The frequency and amplitude shall be within the range indicated in the table above as determined in accordance with paragraph Vibrators. The vibrator shall be inserted vertically at uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1-1/2 times the radius of action of the vibrator. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding layer if such exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly.

3.5 FINISHING.

3.5.1 Unformed Surfaces.

3.5.1.1 General. The ambient temperature of spaces adjacent to surfaces being finished shall be not less than 50° F. In hot weather when the rate of evaporation of surface moisture, as determined by use of Figure 2.1.5 of ACI 305, may reasonably be expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or wet covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow. All unformed surfaces that are not to be covered by additional

concrete or backfill shall have a float finish, unless a trowel finish is specified, and shall be true to the elevation shown on the drawings. Surfaces to receive additional concrete or backfill shall be brought to the elevation shown on the drawings and left true and regular. Exterior surfaces shall be sloped for drainage unless otherwise shown on the drawing or as directed. Joints shall be carefully made with a jointing or edging tool. The finished surfaces shall be protected from stains or abrasions.

3.5.1.2 Float Finish. Surfaces shall be screeded and darbied or bullfloated to bring the surface to the required finish level with no coarse aggregate visible. No water, cement, or mortar shall be added to the surface during the finishing operation. The concrete, while still green but sufficiently hardened to bear a man's weight without deep imprint, shall be floated to a true and even plane. Floating may be performed by use of suitable hand floats or power-driven equipment. Hand floats shall be made of magnesium or aluminum. Tolerance for a floated finish shall be true plane within 5/16 inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

3.5.1.3 Trowel Finish. A trowel finish shall be applied to the surfaces to have a broom finish. Concrete surfaces shall be finished with a float finish, and after surface moisture has disappeared, the surface shall be troweled to a smooth, even, dense finish free from blemishes including trowel marks. Tolerance shall be true planes within 5/16 inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

3.5.1.4 Broom Finish. A broom finish shall be applied to the horizontal surface of the concrete. The concrete surface shall be finished with a float finish and trowel finish. The troweled surface shall be broomed with a fiber-bristle brush in a direction transverse to that of the main traffic.

3.5.2 Formed Surfaces. Within 48 hours after form removal, all fins and loose materials shall be removed. All voids and honeycombs exceeding 1/2 inch in diameter permanently exposed to view and all tie-rod holes permanently exposed or not, shall be reamed or chipped and filled with dry-pack mortar. Defective areas larger than 36 square inches in any surface, permanently exposed or not, shall be delineated in a rectangular shape by a saw cut a minimum depth of 1 inch. All defective concrete in the delineated area shall be removed and replaced with carefully placed and compacted concrete. The cement used in the mortar or concrete for all surfaces permanently exposed to view shall be a blend of Portland cement and white cement properly proportioned so that the final color when cured will be the same as adjacent concrete. Temperature of the concrete, ambient air, replacement concrete, or mortar during remedial work including curing shall be above 50° F. The prepared area shall be dampened, brush-coated with a neat cement grout or with an approved epoxy resin, and filled with mortar or concrete. The mortar shall consist of 1 part cement to 2-1/2 parts fine aggregate. The quantity of mixing water shall be the minimum necessary to obtain a uniform mixture and to permit placing. Mortar shall be thoroughly compacted in place and struck off to adjacent concrete. Replacement concrete shall be drier than the usual mixture and thoroughly tamped into place and finished. Forms shall be used if required. Metal tools shall not be used to finish permanently exposed surfaces. The patched areas shall be cured for 7 days.

Surfaces, with unspecified finish, shall be left with the texture imparted by the forms except those having defective surfaces which shall be repaired as described in paragraph Formed Surfaces. Uniform color of the concrete shall

be maintained by use of only one mixture without changes in materials or proportions for any structure or portion of structure that is exposed to view or on which a special finish is required. The form panels used to produce the finish shall be orderly in arrangement, with joints between panels planned in approved relation to openings, corners, and other architectural features. Forms shall not be reused if there is any evidence of surface wear or defects that would impair the quality of the surface.

3.6 CURING AND PROTECTION.

3.6.1 General. All concrete shall be cured by an approved method for a period of 7 days. Piling shall not be driven within 100 feet of concrete less than 7 days old. Immediately after placement, concrete shall be protected from premature drying, extremes in temperatures, rapid temperature change, and mechanical injury. All materials and equipment needed for adequate curing and protection shall be available and at the placement site prior to the start of concrete placement. Concrete shall be protected from the damaging effects of rain for 12 hours and from flowing water for 14 days. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time.

3.6.2 Moist Curing. Concrete moist-cured shall be maintained continuously (not periodically) wet for the entire curing period. If water or curing materials stain or discolor concrete surfaces that are to be permanently exposed, they shall be cleaned as required in paragraph Cleaning. Where wooden form sheathing is left in place during curing, the sheathing shall be kept wet at all times. Horizontal surfaces may be moist cured by ponding, by covering with a minimum uniform thickness of 2 inches of continuously saturated sand, or by covering with saturated nonstaining burlap or cotton mats. Horizontal construction joints may be allowed to dry for 12 hours immediately prior to the placing of the following lift.

3.6.3 Membrane Curing. Concrete may be cured with an approved curing compound in lieu of moist curing except that membrane curing will not be permitted on any surface containing protruding steel reinforcement.

3.6.3.1 Pigmented Curing Compound. A pigmented-type curing compound conforming to ASTM C 309 may be used on surfaces that will not be exposed to view when the project is completed. Membrane curing shall not be used on surfaces that are to receive any subsequent treatment depending on adhesion or bonding to the concrete. A nonpigmented-type curing compound, containing a fugitive dye, conforming to ASTM C 309 with the reflective requirements waived may be used on surfaces that will be exposed to view when the project is completed.

3.6.3.2 Application. The curing compound shall be applied to formed surfaces immediately after the forms are removed and prior to any patching or other surface treatment except the cleaning of loose sand, mortar, and debris from the surface. The surfaces shall be thoroughly moistened with water, and the curing compound applied as soon as free water disappears. The curing compound shall be applied to unformed surfaces as soon as free water has disappeared. The curing compound shall be applied in a two-coat continuous operation by approved motorized power-spraying equipment operating at a minimum pressure of 75 pounds per square inch, at a uniform coverage of not more than 400 square feet per gallon for each coat, and the second coat shall be applied perpendicular to the first coat. Concrete surfaces that have been subjected to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage herein specified. All concrete surfaces on which the curing compound has been applied shall be adequately protected for the duration of the entire curing period from

pedestrian and vehicular traffic and from any other cause that will disrupt the continuity of the curing membrane.

3.6.4 Cold Weather. When the daily outdoor low temperature is less than 32° F. the temperature of the concrete shall be maintained above 40° F. for the first 7 days after placing. In addition, during the period of protection removal, the air temperature adjacent to the concrete surfaces shall be controlled so that concrete near the surface will not be subjected to a temperature differential of more than 25° degrees F as determined by observation of ambient and concrete temperatures. Curing compounds shall not be used on concrete surfaces that are maintained at curing temperature by use of free steam.

3.7 TESTS AND INSPECTION.

3.7.1 General. The Contractor shall perform the inspection and tests described below, and based upon the results of these inspections and tests, shall take the action required in paragraph Action Required and submit reports as required in paragraphs Action Required and Reports. The laboratory performing the tests shall conform to ASTM C 1077. The individuals who sample and test concrete or the constituents of concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I. These individuals shall remain on the job site until the concrete placement is completed.

3.7.2 Inspection Details and Frequency of Testing.

3.7.2.1 Fine Aggregate.

3.7.2.1.1 Grading. At least once during each shift in which concrete is being delivered, there shall be one sieve analysis and fineness modulus determination in accordance with ASTM C 136 and CRD-C 104, respectively, for the fine aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for control. However, the Contractor is responsible for delivering fine aggregate to the mixer within specification limits. Results of tests shall be reported in writing.

3.7.2.1.2 Moisture Content. When in the opinion of the Contracting Officer the electric moisture meter is not operating satisfactorily, there shall be a test for moisture content in accordance with either ASTM C 70, or ASTM C 566 during mixing plant operation. An additional test shall be made whenever the slump is shown to be out of control or excessive variation in workability is reported by the placing foreperson.

3.7.2.2 Coarse Aggregate.

3.7.2.2.1 Grading. At least once during each shift that concrete is being delivered, there shall be a sieve analysis in accordance with ASTM C 136 for coarse aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for production control. However, the Contractor is responsible for delivering the aggregate to the mixer within specification limits. Results of tests shall be reported in writing.

3.7.2.2.2 Moisture Content. A test for moisture content of each size of coarse aggregate in accordance with ASTM C 566 shall be made at least once

a shift. The results shall be used to adjust the added water in the control of the batch plant.

3.7.2.3 Scales.

3.7.2.3.1 Weighing Accuracy. The accuracy of the scales shall be checked by test weights at least once a month for conformance with the applicable requirement of paragraph Scales. Such tests shall also be made whenever there are variations in properties of the fresh concrete that could result from batching errors. Results of tests shall be reported in writing.

3.7.2.3.2 Batching and Recording Accuracy. Once a week the accuracy of each batching and recording device shall be checked during a weighing operation by noting and recording the required weight, recorded weight, and the actual weight batched. The Contractor shall provide the necessary calibration devices and confirm that the admixture dispensers described in paragraph Batching Tolerances and are operating properly. Results of tests shall be reported in writing.

3.7.2.4 Batch-Plant Control. The measurement of all constituent materials including cement, each size of aggregate, water, and admixtures shall be continuously controlled. The aggregate weights and amount of added water shall be adjusted as necessary to compensate for free moisture in the aggregates. The amount of air-entraining admixture shall be adjusted to control air content within specified limits. A report shall be prepared indicating type and source of cement used, amount and source of admixtures used, aggregate source, the required aggregate and water weights per cubic yard, amount of water as free moisture in each size of aggregate, and the batched aggregate and water weights per cubic yard of concrete batched for the project. The report shall be submitted to the Contracting Officer.

3.7.2.5 Concrete.

3.7.2.5.1 Air Content. At least one tests for air content shall be made on randomly selected batches of each class of concrete during each day of concrete production. Additional tests shall be made when excessive variation in workability is reported by the placing foreperson or Government inspector. Tests shall be made in accordance with ASTM C 231. The report shall be submitted to the Contracting Officer.

3.7.2.5.2 Slump. At least one slump tests shall be made on randomly selected batches of concrete during each day's concrete production in accordance with ASTM C 143. Additional tests shall be made when the placing foreman or Government inspector reports excessive variation in workability. The report shall be submitted to the Contracting Officer.

3.7.2.5.3 Temperature. The temperature of the concrete shall be measured when compressive strength specimens are fabricated. Measurement shall be in accordance with ASTM C 1064. The temperature shall be reported along with the compressive strength data.

3.7.2.5.4 Concrete Compressive-Strength Specimens. All concrete shall have at least one set of test specimens made and stored at the job site to obtain the same curing temperature, each day on each different concrete mixture placed during the day. Additional sets of test cylinders shall be made, as directed by the Contracting Officer, when the mixture proportions are changed or when low strengths are detected. A random sampling plan shall be developed by the contractor and approved by the Contracting Officer prior to the start of construction. The plan shall assure that sampling is done in a

completely random and unbiased manner. A set of test specimens for concrete with strength as specified in paragraph Strength shall consist of three cylinders, one tested at 7 days and two tested at 28 days. Test specimens shall be molded and cured in accordance with ASTM C 31 and tested in accordance with ASTM C 39. All compressive-strength tests shall be reported immediately to the Contracting Officer. Quality control charts shall be kept for individual strength tests, moving average for strength, and moving average for range for each mixture. The charts shall be similar to those in ACI 214.

3.7.2.6 Preparation for Placing. The Contractor shall inspect foundation, construction joints, forms, and embedded items in sufficient time prior to each concrete placement in order to certify to the Contracting Officer that they are ready to receive concrete. The results of each inspection shall be reported in writing.

3.7.2.7 Placing. The placing foreperson shall supervise all placing operations and shall be responsible for measuring and recording concrete temperatures, ambient temperature, weather conditions, time of placement, yardage placed, and method of placement. A report shall be submitted in writing to the Contracting Officer.

3.7.2.8 Vibrators. The frequency and amplitude of each vibrator shall be determined in accordance with CRD-C 521 prior to initial use. Additional tests shall be made when a vibrator does not appear to be adequately consolidating the concrete. The frequency shall be determined while the vibrator is operating in concrete with the tachometer being held against the upper end of the vibrator while almost submerged and just before the vibrator is withdrawn from the concrete. The amplitude shall be determined with the head vibrating in air. Two measurements shall be taken, one near the tip and another near the upper end of the vibrator head, and these results averaged. The make, model, type, and size of the vibrator and frequency and amplitude results shall be reported in writing.

3.7.2.9 Curing.

3.7.2.9.1 Moist Curing. At least once each day during the curing period, an inspection shall be made of all areas subject to moist curing. The surface moisture condition shall be reported in writing.

3.7.2.9.2 Curing Compound. No curing compound shall be applied until it has been verified that the compound is properly mixed and ready for spraying. At the end of each operation, the quantity of compound used and the area of concrete surface covered shall be reported, and the rate of coverage in square feet per gallon shall be computed. The report shall state whether coverage is uniform.

3.7.2.10 Protection. At least once a day during the curing period, an inspection shall be made of all areas subject to cold-weather protection. Deficiencies shall be noted. During removal of protection, measurement of concrete and ambient temperature shall be made at least hourly. A report shall be submitted in writing to the Contracting Officer.

3.7.3 Action Required.

3.7.3.1 Fine Aggregate.

3.7.3.1.1 Grading. When the amount passing any sieve is outside the specification limits, the fine aggregate shall be immediately resampled and retested. If there is another failure on any sieve, the fact shall

immediately be reported to the Contracting Officer, and immediate steps shall be taken to rectify the situation.

3.7.3.1.2 Moisture. Whenever the moisture content of the fine aggregate changes by 0.5 percent or more, the scale settings for the fine-aggregate batcher and water batcher shall be adjusted directly or by means of a moisture compensation device.

3.7.3.2 Coarse Aggregate Grading. When the amount passing any sieve is outside the specification limits, the coarse aggregate shall immediately be resampled and retested. If the second sample fails on any sieve, that fact shall be reported to the Contracting Officer and immediate steps shall be taken to correct the grading.

3.7.3.3 Scales. Whenever either the weighing accuracy or batching accuracy is found not to comply with specification requirements, the plant shall not be operated until necessary adjustments or repairs have been made. Discrepancies in recording accuracies shall be corrected immediately.

3.7.3.4 Concrete.

3.7.3.4.1 Air Content. Whenever the air content departs from the specified range, the concrete shall not be delivered to the forms.

3.7.3.4.2 Slump. Whenever the slump exceeds the upper limit stipulated in PART 2, paragraph Slump, the concrete shall not be delivered to the forms.

3.7.3.5 Placing. The placing foreman shall verify that an adequate number of acceptable vibrators in working order and with competent operators are available before permitting placing to begin. Placing shall not be continued if any pile of concrete is inadequately consolidated. If any batch of concrete fails to meet the temperature requirements, immediate steps shall be taken to improve temperature controls.

3.7.3.6 Curing.

3.7.3.6.1 Moist Curing. When a daily inspection report lists an area of inadequate curing, the required curing period for that area shall be extended by 1 day.

3.7.3.6.2 Curing Compound. When the coverage rate of curing compound is less than that specified or when the coverage is not uniform, the entire surface shall be sprayed again.

3.7.3.7 Protection. When any concrete temperature during the period of protection or protection removal fails to comply with the specifications, that fact shall be reported to the Contracting Officer, and immediate steps shall be taken to correct the situation.

3.7.4 Reports. All results of tests shall be submitted to the Contracting Officer daily. These requirements do not relieve the Contractor of the obligation to report certain failures immediately as required in preceding paragraphs. Such reports of failures and the action taken shall be confirmed in writing in the reports. The Contracting Officer has the right to examine all Contractor quality control records.

-END OF SECTION-

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SECTION 03 34 25
PRECAST CONCRETE

PART 1 - GENERAL

1.1 SCOPE. Work covered under this section includes fabrication, installation and acceptance testing of the following precast concrete items:

- a. Reinforced Concrete Pipe
- b. Manholes

1.2 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.2.1 AMERICAN CONCRETE INSTITUTE (ACI)

ACI 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete

ACI 214 Evaluation of Strength Test Results of Concrete

1.2.2 AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)

ASTM C 31 Making and Curing Concrete Test Specimens in the Field

ASTM C 33 Concrete Aggregates

ASTM C 39 Compressive Strength of Cylindrical Concrete Specimens

ASTM C 150 Portland Cement

ASTM C 172 Sampling Freshly Mixed Concrete

ASTM C 231 Air Content of Freshly Mixed Concrete By The Pressure Method

ASTM C 260 Air-Entraining Admixtures for Concrete

ASTM C 494 Chemical Admixtures for Concrete

ASTM C 618 Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture In Portland Cement Concrete

ASTM C 1107 Packaged Dry, Hydraulic-Cement Grout, (Nonshrink)

1.2.3 PRECAST PRESTRESSED CONCRETE INSTITUTE (PCI)

PCI Mnl-116 Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products

1.3 SYSTEM DESCRIPTION

1.3.1 Manufacturer Qualifications. Precast units shall be designed and fabricated by a precast concrete manufacturer who has demonstrated skill and equipment to make quality precast concrete members. The manufacturer shall have a minimum of 3 years experience in the manufacture of precast units similar to that indicated on the drawings.

1.3.2 Performance Requirements. Perform the following testing to ensure the materials and method used meet the requirements of these specifications and will produce precast concrete members which are suitable for their intended use.

1.3.2.1 Concrete Strength. Concrete shall be sampled and cylinders made in accordance with ASTM C 172 and ASTM C 31.

a. Concrete Test Cylinders. A minimum of three concrete test cylinders shall be made for each concrete batch to verify the attainment of the specified strength.

b. Cylinder Making. Cylinders shall be made as near as possible to the location where they will be cured and shall not be disturbed in any way from 1/2 hour after casting until they are either 24 hours old or ready to be tested. Concrete in cylinders may be consolidated by rodding or by vibration as specified in ASTM C 31.

c. Cylinder Curing

(1) Test cylinders shall be cured with similar methods as the members they represent. In lieu of actual curing with the members, cylinders may be cured in curing chambers correlated in temperature and humidity with the beds. In such a case, the correlation shall be constantly verified by use of recording thermometers in the curing chambers and comparison with the temperature records of beds and by use of the same methods of moisture retention for curing chambers and casting beds.

(2) For beds cured by steam or radiant heat, cylinders shall be placed at random points along the bed. If there is any indication of variable heat, cylinders shall be placed in the coolest area.

(3) Test cylinders to indicate compliance with specified 28-day strength shall remain in the bed with the member until the member is removed. At that time, the cylinders shall be removed from their molds and placed in storage in a moist condition at 73.4 degrees plus or minus 3 degrees F.

d. Testing of Cylinders

(1) Testing of cylinders to determine compressive strength shall be performed in accordance with ASTM C 39. The strength of concrete at any given age shall be determined as the average of two cylinders, except a single cylinder test can be used to determine stress transfer strength or predictive strengths at less than 28 days.

(2) Testing machines shall be calibrated in accordance with ASTM C 39.

1.3.2.2 Air Content. The air content tests shall be conducted in accordance with ASTM C 231. At least one air content test shall be conducted on the concrete from which each member is cast.

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 01 13 00 - SUBMITTAL PROCEDURES:

1.4.1 Data.

1.4.1.1 Concrete Mixture Proportions; GA. 30 days prior to placement of casting, 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.

1.4.2 Drawings.

1.4.2.1 Shop Drawings; GA. The Contractor shall prepare and submit for approval complete shop drawings that show the precast unit manufacturer's recommended details and materials for the work required by paragraphs DELIVERY, STORAGE, AND HANDLING and ERECTION. The shop drawings shall include: marking of the units for the placing drawings; formwork; reinforcing steel details; method of curing; and pickup points and lifting devices.

1.4.3 Reports.

1.4.3.1 Concrete Tests; FIO. The results of concrete strength testing by the contractor shall be submitted not more than 5 days after the tests are completed.

1.4.4 Certificates. Cement, Pozzolan, Air-Entraining Admixture, Water-Reducing Admixture, Accelerating Admixture, and Aggregates shall be certified for compliance with all specification requirements.

1.4.4.1 Cement; FIO.

1.4.4.2 Pozzolan; FIO.

1.4.4.3 Air-Entraining Admixture; FIO.

1.4.4.4 Water-Reducing Admixture; FIO.

1.4.4.5 Accelerating Admixture; FIO.

1.4.4.6 Aggregates; FIO.

1.4.4.7 Air Content; FIO. Each precast member delivered to the jobsite shall be accompanied by a certificate certifying that the air content in the concrete in that member is in compliance with the specifications. The certification must be based on an air content test conducted in conformance with ASTM C 231 on at least one of the batches of concrete from which the member was cast.

1.4.4.8 Non-shrink Grout; 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. The literature shall also certify that the non-shrink grout will meet the specified strength within the specified time. Non-shrink grout containing metallic aggregate will not be permitted.

1.4.5 Records.

1.4.5.1 Construction Records; FIO. Construction records of the manufacturing, handling, and erection of the precast concrete members shall be submitted.

1.5 DELIVERY, STORAGE, AND HANDLING

1.5.1 Transportation.

1.5.1.1 Transporting Members. In transporting members by truck, railroad car, or barge, provision shall be made for supporting the items to prevent damage due to deflection or vibration. Adequate padding material shall be provided between tie chains or cables to preclude chipping of concrete.

1.5.1.2 Lateral Deflection or Vibration. Any noticeable indication of deflection or vibration during transportation shall be corrected by rigid bracing or support.

1.5.2 Storage.

1.5.2.1 Storage Areas. Storage areas for precast members shall be stabilized, and suitable foundations shall be provided, so differential settlement or twisting of members will not occur.

1.5.2.2 Stacked Members. Stacked members shall be separated and supported by battens placed across the full width of each item.

1.5.3 Handling of Members. The location of pickup points for handling of the members and details of the pickup devices shall be shown in shop drawings. Members shall be handled only by means of approved devices at designated locations. Members shall be maintained in an upright position at all times and picked up and supported as shown in approved shop drawings.

PART 2 - PRODUCTS

2.1 MATERIALS. Materials shall comply with the following:

2.1.1 Cement. Cement shall comply with the following:

2.1.1.1 Portland Cement. Portland cement shall conform to ASTM C 150, Type I or II.

2.1.2 Pozzolan. Pozzolan shall conform to ASTM C 618 Class F or C.

2.1.3 Other Materials.

2.1.3.1 Aggregates. Aggregates shall meet the requirements of ASTM C 33. Coarse aggregate shall meet the requirements of Class 4S.

2.1.3.2 Admixtures. In no event shall admixtures containing chlorides or nitrates be used in the concrete.

a. Air-entraining admixture shall be certified to comply with ASTM C 260.

b. Water-reducing admixture shall be certified to comply with ASTM C 494 Type A.

c. Accelerating admixture shall be certified to comply with ASTM C 494 Type C.

2.1.4 Steel Reinforcement. Steel bars and accessories for reinforcement shall comply with SECTION 03 32 00 - CONCRETE REINFORCEMENT.

2.1.5 Non-shrink Grout. Non-shrink grout shall conform to ASTM C 1107 and shall be a commercial formulation suitable for the application proposed.

2.2 CONCRETE MIXTURE PROPORTIONS

2.2.1 Concrete. Concrete shall be composed of cementitious material, water, fine and coarse aggregate, and admixtures. The cementitious material shall be portland cement and pozzolan where appropriate. The admixtures shall be an air-entraining agent and may include a water-reducing admixture when its formulation and use are approved by the Contracting Officer.

2.2.2 Proportions. The concrete mixture proportions shall meet the following requirements. The Air Content should be between 5 and 7 percent as determined in accordance with ASTM C 231. Proportions shall be selected so that the maximum permitted w/c ratio is not exceeded and so as to produce an average strength exceeding the design strength f'c by the amount indicated below. Where the production facility has a standard deviation record determined in accordance with ACI 214, based on 30 consecutive strength tests of similar mixture proportions to that proposed, obtained within 1 year of the time when concrete placing is expected, it shall be used in selecting average strength. The average strength used as the basis for selecting proportions shall exceed the specified strength f'c by at least:

400 psi if standard deviation is less than 300 psi
550 psi if standard deviation is 300 to 400 psi
700 psi if standard deviation is 400 to 500 psi
900 psi if standard deviation is 500 to 600 psi

If the standard deviation exceeds 600 psi or if a standard deviation record is not available, proportions shall be selected to produce an average strength at least 1,200 psi greater than the specified strength.

Mixtures shall be proportioned in accordance with ACI 211.1. The trial mixtures shall be formulated using the same materials as those to be used in the units supplied under this specification, and the selected proportions shall be submitted for approval with the results of cylinder strengths at 28 days.

2.3 EVALUATION AND ACCEPTANCE

2.3.1 Concrete. A test result shall be the average of the strengths of the three test cylinders made in accordance with paragraph SYSTEM DESCRIPTION, subparagraph PERFORMANCE REQUIREMENTS, subparagraph CONCRETE STRENGTH, subparagraph "a", CONCRETE TEST CYLINDERS. The strength level of the concrete will be considered satisfactory if the average of each set of three strength tests equals or exceeds the specified strength f'c and no individual test falls below the specified value by more than 500 pounds per square inch. Members manufactured with concrete that does not meet the strength requirements shall be rejected.

2.3.1.1 Air Content. All members cast with concrete having a measured air content less than 5 percent shall be rejected. Members cast with concrete having an air content up to 9 percent may be incorporated into the work if the strength requirements are met.

2.3.2 Defects.

2.3.2.1 Minor Defects. Minor defects are those which involve less than 36 square inches of concrete and do not expose reinforcing steel. These defects will be repaired as specified hereinafter. Cracks which are visible but are 0.01 inch wide or less will be accepted.

2.3.2.2 Major Defects. Major defects are those which involve more than 36 square inches of concrete or expose reinforcing steel. If one or more major defects appear in a member, it shall be rejected. Cracks of a width of more than 0.01 inch shall be cause for rejection of the member.

PART 3 - EXECUTION

3.1 FABRICATION. Fabrication of precast members shall follow the applicable provisions of the PCI Mnl-116, except as specified herein.

3.2 BEDS AND FORMS.

3.2.1 Casting Beds. All casting beds shall have concrete support on unyielding foundations.

3.2.2 Forms. Forms, both fixed and movable, shall be of steel. All forms and beds shall be thoroughly cleaned after each use. Leakage of the paste in form joints is not acceptable, and measures shall be taken to prevent such leakage.

3.2.3 Bulkheads. Bulkheads, spacers, templates, and similar equipment having influence on the accuracy of dimensions and alignment shall be regularly inspected and maintained after each casting.

3.2.4 Alignment. Accurate alignment of forms shall be maintained during the casting operation to assure compliances with tolerances specified in Paragraph 2.3.2.

3.2.5 Form Ties. For exposed members, form ties, if used, shall be of the threaded or snap-off type so no parts will be left at the surface of the finished concrete.

3.3 STEEL REINFORCEMENT. Steel bars shall be placed in accordance with SECTION 03 32 00 - CONCRETE REINFORCEMENT.

3.4 CONCRETE PLACEMENT. Concrete placement shall be in accordance with SECTION 03 33 00 - CAST-IN-PLACE CONCRETE, except that once placement is started in a member, it shall be carried on in a continuous operation until the member is completed. Members shall be cast in a horizontal position; casting in tiers will not be permitted. Adequate vibration shall be provided with internal and form vibrators so the cast members shall be free of rock pockets or surface blemishes resulting from inadequate vibration. Cold joints shall not be permitted. If delays occur that result in hardening of the concrete so it will not receive a vibrator and again become plastic, the concrete shall be removed and the forms shall be washed out and refilled, otherwise partially cast members will be rejected.

3.5 CURING AND PROTECTION. Concrete for the manufacturing of the precast-prestressed concrete members shall be cured and protected in accordance with SECTION 03 33 00 - CAST-IN-PLACE CONCRETE or by other methods further specified here.

3.5.1 Curing with Steam at Atmospheric Pressure. Steam curing shall be under a suitable enclosure to retain the live steam to minimize moisture and heat losses. The enclosure shall allow free circulation of the steam around the sides and top of the beams. Steam jets shall be so positioned so they do not discharge directly on the concrete, forms, or test cylinders. The cycle of steam application shall conform to the following:

3.5.1.1 Curing After Placing and Vibrating. After placing and vibrating, the concrete shall be allowed to attain its initial set before the steam is applied. During the period between placement of the concrete and application of steam, provisions shall be made to prevent surface drying by means of a coating of membrane curing compound, moist covers, or equally effective methods. Application of the steam shall be delayed not less than 2 hours and not more than 10 hours after the time of concrete placement. If the ambient temperature is below 50 degrees F, enough heat shall be applied to maintain the concrete at its placing temperature.

3.5.1.2 Temperature Increase. The ambient temperature within the casting enclosure shall be increased at a rate not to exceed 40 degrees F per hour. Temperature increase shall be as uniform as possible.

3.5.1.3 Temperature Range. The temperature shall be increased until the ambient temperature in the casting enclosure is between 140 and 160 degrees F.

3.5.1.4 Temperature Decrease. In discontinuing the steam curing, the ambient air temperature shall decrease at a rate not to exceed 40 degrees F per hour. Temperature decrease shall be as uniform as possible.

3.5.1.5 Recording Thermometers. Recording thermometers showing the time-temperature relationship through the curing period shall be provided. At least one recording thermometer per casting enclosure shall be used. The desired curing time-temperature relationship shall be placed on the recording chart of the recording thermometer to aid the personnel controlling the temperature during curing. Recording charts shall be made available upon request and shall be clearly visible during the curing process.

3.5.2 Curing with Radiant Heat and Moisture.

3.5.2.1 Radiant Heat. Radiant heat may be applied to beds by means of pipes circulating steam, hot oil, or hot water or by electric blankets or heating elements on forms. Pipes, blankets, or elements shall not be in contact with concrete, form surface, or test cylinders.

3.5.2.2 Moisture Loss. During the cycle of radiant heat curing, effective means shall be provided to prevent rapid loss of moisture in any part of the member. Moisture may be applied by a covering of moist burlap or cotton matting. Moisture may be retained by covering the member with a plastic sheet in combination with an insulating cover or by applying a liquid seal coat or membrane curing compound.

3.5.2.3 Temperature Limits. Temperature limits and use of recording thermometer shall be as specified for curing with steam at atmospheric pressure.

3.5.2.4 Termination of Curing. Termination of curing shall be as specified in SECTION 03 33 00 - CAST-IN-PLACE CONCRETE unless the concrete has been cured by one of the two methods stated above.

3.6 REPAIRS. All honeycombed areas, chipped corners, air pockets over 1/4 inch in diameter, and other minor defects shall be repaired. Form offsets or fins over 1/8 inch shall be ground smooth. All unsound concrete shall be removed from defective areas prior to repairing. All surfaces permanently exposed to view shall be repaired by a blend of portland cement and white cement properly proportioned so that the final color when cured will be the same as adjacent concrete.

3.7 ERECTION. Erection shall comply with the following.

3.7.1 Storage Provisions. All provisions for storage and handling given in paragraph DELIVERY, STORAGE, AND HANDLING shall be observed at the erection site.

3.7.2 Seating of Precast Concrete Members. The precast concrete members shall be set into place in a manner which assures full bearing. If the bearing called for in the contract drawing is not obtained, then the members shall be removed and the situation corrected.

3.7.3 Erection Plan. The erection plan shall be in sufficient detail so that adequacy of equipment, techniques, and accessories can be determined and comments offered. Acceptance of the Contractor's erection plan shall not relieve the Contractor of his/her responsibility for erecting precast members into position as required by the plans and specifications.

3.8 CONSTRUCTION RECORDS. Complete construction records shall be kept of the manufacturing, handling, and erection of the precast concrete members. Records shall be kept for, but not limited to, the following items:

- a. Specifications of material used in the manufacture of the members.
- b. Time-temperature history of the concrete members from casting through steam or radiant heat curing.
- c. Records of the inspection of the members each time they are moved.
- d. Records of any defects in the member and any corrective measures taken.

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SECTION 31 21 10
STRIPPING

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for stripping.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 STRIPPING. Stripping shall consist of the removal of all vegetation down to a depth of 18 inches from all areas where excavation or embankment is to be made. Vegetation stripping shall include the removal of material such as sod, grass, roots, residue of agricultural crops, and decayed vegetable matter. The products of the vegetation stripping shall be stockpiled inside of the construction limits and in an area approved by the Contracting Officer. Excess stripping materials shall be disposed of on site as directed by the contracting Officer.

3.2 REMOVAL OF DEBRIS. The Contractor shall remove all debris and rubbish consisting of, but not be limited to, glass, plastic, wood, cloth, paper, concrete rubble, metal, brick, rubber, etc. from within the construction limits and shall dispose of such debris and rubbish in accordance with SECTION 02 20 70 - REMOVALS AND DEMOLITION.

-END OF SECTION 31 21 10-

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PART 1 - GENERAL

1.1 SCOPE. The work covered by this section includes furnishing all labor, equipment, supplies, materials, and performing all operations necessary for earthwork including excavating, trenching, filling, and backfilling for relief wells construction and their appurtenances. This includes but is not limited to: relief well concrete pads, all manholes, concrete slabs, seepage collector systems, and drainage discharge pipes as indicated on the drawings and as specified herein.

1.2 APPLICABLE PUBLICATIONS. All publications referenced shall be the most current edition unless otherwise stated. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.2.1 American Society for Testing and Materials (ASTM).

ASTM D 698	Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort [12,400 ft-lbf/ft (600 KN-m/m ³)]
ASTM D 1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2216	Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D 2487	Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2937	Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method

1.2.2 Missouri Standard Specifications for Highway Construction, dated 2011, by the Missouri Highway and Transportation Commission (MoDOT). The material for the "flowable backfill" shall conform to the provision specified in Section 621, FLOWABLE BACKFILL, Article 621.4. The term Engineer as used therein shall be interpreted to mean the Contracting Officer.

1.2.3 U. S. Army Corps of Engineers Manual (EM).

EM 385-1-1	Safety and Health Requirements Manual,
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1.3 DEFINITIONS.

1.3.1 Complete Passes During Compaction Operations. A complete pass during the compaction operations is defined as one round trip of compaction equipment covering the entire area of the lift.

1.3.2 Collector Pipe. The pipe running parallel with the levee and collects the flows coming from the relief wells.

1.3.3 Lateral Pipes. The pipes running perpendicular to the levee and connects the relief well flows to the collector pipe.

1.3.4 Discharge Pipe. The pipe running perpendicular to the levee and conveys the collector pipe flows to south to the outfall at the existing Master Ditch.

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 to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.4.1 Reports. Placement and Compaction Certification; FIO. Submit reports certifying that the placement and compaction of the fills and backfills conform to the requirements specified in SECTION 31 22 00 - EARTHWORK within 24 hours of the work being performed.

1.4.2 Plan. Excavation Plan; GA. An excavation plan identifying the method, equipment, and sequence of work for the excavations shall be submitted by the Contractor for government approval. Excavations that are required to construct the contract features include but are not limited to: concrete slab, relief well manholes, laterals, collector pipe, collector pipe manholes, discharge pipes, discharge pipe manholes and ditch slope protection, as well as, excavations required for the removal of existing inlets, manholes and drainage pipes. The excavation installation of the discharge pipes and discharge pipe manholes shall be "open cut" excavation. The excavation plan shall be submitted and approved by the Contracting Officer prior to commencing any earthwork.

1.4.3 Plan. Shoring and Trenching Plan; GA. The trench walls for the construction of relief well manholes, laterals, collector pipe and collector pipe manholes shall be made vertical and supported with shoring and/or trench shields and of such width as recommended in the manufacturer's installation manual for the features of work listed above. The shoring and trenching plan shall be submitted by the Contractor in accordance with EM 385-1-1. The shoring and trenching plan shall be prepared, signed, and sealed by a professional engineer, who is registered in the state of Missouri. All submitted analyses, calculations, designs, and plans shall be signed and sealed by the responsible professional engineer. The shoring and trenching plan shall be submitted a minimum of 30 days in advance prior to initiating work on the manholes and collector pipes for the approval by the Contracting Officer.

1.4.4 Plan. Fill and Backfill Plan; GA. The Contractor shall submit for review and approval by the Contracting Officer a minimum of 30 days prior to filling and backfilling, the plan of operations for accomplishing all fills and backfills as specified herein. The plan shall address the construction of the relief well manholes, laterals, collector pipe, collector pipe manholes, the discharge pipes and the discharge pipe manholes. The plan shall contain, as a minimum but not limited to, the following:

(1) The Contractor's proposed list of equipment types and quantity of each equipment type to be utilized for all fill and backfill operations.

(2) The Contractor's proposed methods for placing and compacting the fills and backfills. This shall also include the Contractor's proposed

methods to avoid "floating" the lateral, collector and discharge pipes when placing the flowable fill, and his proposed method of installing flowable fill on sides of pipe to avoid lateral displacement.

(3) The Contractor's proposed methods for providing drainage prior to, during, and after placement of partially completed and completed fills and backfills. The Contractor shall include the method of smoothing and sealing the fills and backfills at the end of each work period to minimize the material's absorption of unneeded moisture from precipitation and runoff.

1.4.5 Statements. Gradation; FIO. Submit statement and certify that the gradation for crushed stone material and the flowable fill conform to the specified requirements.

1.5 QUALITY CONTROL. The contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of its quality control for all construction operations, including but not limited to the following:

- a. Excavation and trenching for relief wells and collector system construction and excavation for discharge pipes and manholes.
- b. Foundation preparation of all excavated and trenched areas.
- c. Fill and backfill placement and compaction certification.

1.6 PERMITS. In accordance with the Contract Clause PERMITS AND RESPONSIBILITIES, the Contractor shall obtain all necessary permits required for disposal, hauling, erosion control, and pay all fees associated with permitting and compliance. In addition, the Government has obtained permits for storm water discharge (NPDES). These permits are discussed in SECTION 01 11 30 - ENVIRONMENTAL PROTECTION. The Contractor shall comply with the terms of these permits and with the requirements of SECTION 01 11 30 and this section.

1.7 PROTECTION OF CULTURAL AND NATURAL RESOURCES. All work and Contractor operations shall comply with the requirements of SECTION 01130 and with the requirements of this section.

1.8 PROTECTION OF EXISTING MANMADE FACILITIES AND NATURAL FEATURES. Excavation shall be conducted in such a manner as to avoid damage to trees left standing and trees outside the clearing and excavation area, existing buildings, manmade facilities and natural features, and with due regard to the safety of employees and others. Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation and that are to be retained shall be protected from damage during excavation.

1.9 SUBSURFACE DATA. Subsurface soil boring logs are shown on the drawings. This data represents the best subsurface information available; however, variations may exist in the subsurface between boring locations. The groundwater levels indicated in the soil boring logs were at the time of exploration. The groundwater table may vary significantly depending on the time of year and river stage level. Coarse grain soil gradation curves are available to be reviewed at the St. Louis District Office as specified in SECTION 00 08 00, PHYSICAL DATA. Soil boring logs of those borings located

outside this contract's construction limits are available to be reviewed at the St. Louis District Office as specified in SECTION 00 08 00, PHYSICAL DATA.

PART 2 - PRODUCTS

2.1 MATERIALS.

2.1.1 Pervious Materials. Pervious materials shall consist of any material classified by ASTM D 2487 as SP or SW. If there are insufficient quantities of pervious materials for backfill, the Contractor shall supply the pervious materials at no additional cost to the Government.

2.1.2 Unsuitable Materials. Foundation materials consisting of soft, wet, or organic material, debris, rubble, or any material over 3 inches in size in its maximum dimension shall be considered as unsuitable materials. In no case shall frozen materials be placed.

2.1.3 Impervious (Clay) Materials. Impervious material, defined in paragraph DEFINITIONS, shall consist of materials classified as lean clay (CL) and fat clay (CH) materials in accordance with ASTM D 2487. The in-place water content of the material shall be no more than 2.0 percent above the optimum water content or less than 2.0 percent below the optimum water content for that material as determined by the testing specified in paragraph MATERIALS TESTING. The impervious materials shall have medium to high plasticity characteristics with liquid limits of 40 or higher. Contractor will sample the material and provide the samples to the government for testing.

2.1.4 Topsoil. Topsoil is the upper 12 inches below the ground surface which consists of ML, CL-ML, CL, and CH materials. These materials may contain organics.

2.1.5 Crushed Stone Material. Crushed stone material shall consist of crushed limestone. The crushed stone material shall be composed of tough, durable particles, and shall be reasonably free from thin, flat and elongated pieces, and shall contain no organic matter nor soft, friable particles in quantities considered objectionable by the Contracting Officer. Grading shall conform to the requirements of SECTION 32 22 70, paragraph CRUSHED STONE BEDDING.

2.1.6 Flowable Fill. The flowable fill to be used by the Contractor shall meet the specifications in MoDOT Section 621 - FLOWABLE FILL, Article 621.4. The flowable fill shall be placed such that there is a minimum of 24 inches of flowable fill above the top of the lateral and collector pipes, as shown in the drawings. The flowable fill for the discharge pipes shall be placed to the dimensions, elevations and/or callouts as shown in the drawings.

2.2 EARTHWORK EQUIPMENT.

2.2.1 General. The Contractor shall use tractor drawn or self-propelled compaction rollers to compact the impervious materials. Impervious backfills that are within a 4.0 foot radius of concrete manholes, and existing structures shall be compacted with use of power tamping rammers. Vibratory rollers and vibratory plate compactors shall be used to compact the

crushed stone. All rollers and compactors shall be field checked under the direction and supervision of the Contracting Officer prior to their use on the backfill to assure that they meet the specified requirements. Any equipment that does not meet the specified requirements will not be allowed on the fill or backfill. Water jetting for compaction is strictly prohibited.

2.2.2 Compaction Rollers. Compaction rollers shall consist of one or more units. Each unit shall consist of a cylindrical drum not less than 60 inches in length and not less than 60 inches in diameter. The drums shall be filled with ballast. Ballast may consist of water, sand, or other approved ballast. Each drum shall have staggered feet uniformly spaced over the cylindrical surfaces to provide approximately 3 feet for each two square feet of drum surface. The feet shall be 7 to 9 inches in clear projection from the cylindrical surface of the roller. The weight of the roller when fully loaded shall not be less than 4000 pounds per linear foot of drum length and when empty shall not be less than 2500 pounds per linear foot of drum length. The Contractor shall be required to vary the amount of ballast in the drums to obtain optimum compaction effort for the material being compacted. The rolling units shall be equipped with a suitable device for cleaning the feet. The rolling units of multiple-type compaction rollers shall be pivoted on the main frame in a manner which will permit the units to adapt themselves to uneven ground surfaces and to rotate independently. The roller speed shall not exceed 3.5 miles per hour.

2.2.3 Power Tamping Rammers. Power tamping rammers shall be used to compact backfills consisting of impervious material in areas that compaction rollers are not allowed. Power tamping rammers may be used to compact pervious and crushed stone backfills. Power tamping rammers shall have a minimum impact force of 2,500 pounds per blow. The tamping (shoe) surface area shall be between 140 and 160 square inches.

2.2.4 Vibratory Rollers. Vibratory rollers shall be used to compact pervious and crushed stone materials. The vibratory rollers shall be equipped with a smooth steel compaction drum or steel drum with pads. The level of amplitude and vibration frequency during compaction shall be maintained uniform throughout the fill zone within which it is operating. Vibratory rollers shall be operated at a frequency of vibration during compaction operations between 1,500 and 2,500 vibrations per minute (vpm). The vibratory rollers shall have a minimum centrifugal force of 15,000 pounds. Rollers shall be operated at speeds not to exceed 1.5 miles per hour.

2.2.5 Vibratory Plate Compactors. Vibratory plate compactors for compacting pervious and crushed stone materials shall be equipped with a smooth steel plate. The level of amplitude and vibration frequency during compaction shall be maintained uniform throughout the fill zone within which it is operating. Vibratory plate compactors shall be operated at a frequency of vibration during compaction operations between 5,000 and 8,000 vibrations per minute (vpm). Vibratory plate compactors shall have a minimum centrifugal force of 3,500 pounds. The vibratory plate (shoe) surface area shall be between 400 and 525 square inches.

2.2.6 Spreading Equipment. Spreading equipment shall be capable of spreading and blending materials in horizontal layer thickness between 4.0 and 12.0 inches.

2.2.7 Sprinkling Equipment. Sprinkling equipment shall be designed to apply water uniformly and in controlled quantities to variable widths of surface. The water tank truck shall have a minimum capacity of 2000 gallons.

PART 3 - EXECUTION

3.1 EXCAVATION.

3.1.1 General. Excavation shall be performed to the lines, grades, and dimensions as indicated on the drawings. During the excavation, materials suitable for filling and backfilling shall be stockpiled. Grading shall be done as necessary to prevent surface water from flowing into the excavation, and any water accumulating therein shall be removed to maintain the stability of the bottom and sides of the excavation. Unauthorized over excavation shall be backfilled in accordance with paragraph FOUNDATION PREPARATION, at no additional cost to the Government.

The Contractor shall be aware the in the event of high water and at the direction of the Contracting Officer's Representative could be required to prematurely backfill the excavation according to paragraph Compaction of Backfills. The maximum liner distance of excavation for the collector and lateral pipes is 300 feet and 600 feet for the discharge pipe.

3.1.2 Trench Excavations.

3.1.2.1 General. Trenches shall be excavated to the lines, grades, and limits as shown on the drawings. Trench walls shall be excavated and stabilized in accordance with EM 385-1-1. Trench walls more than four feet high shall be shored to provide protection for employees who may be exposed to moving ground or cave in.

3.1.2.2 Bottom Preparation. The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Stones of 3 inches or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed to avoid point bearing.

3.1.2.3 Control of Water. The Contractor shall keep all excavations free of water at the Contractor's own expense. The contractor shall maintain a water table two feet below the open excavation. The Contractor shall comply with all the requirements stated in SECTION 02 21 40 - CARE OF WATER.

3.1.2.4 Removal of Unsuitable Material. Where unsuitable material is encountered in the bottom of the excavations, such material shall be removed to the depth directed by the Contracting Officer. The unsuitable material shall be replaced to the proper grade with impervious material as provided in paragraph FOUNDATION PREPARATION.

3.1.3 Excavations for Lateral and Collector Pipes. Excavation for lateral pipes and collector pipes shall be excavated as a trench in accordance with the requirements specified in paragraph Trench Excavations. Excavations for lateral pipes and collector pipes shall be excavated 12 inches below the bottom of the pipes.

3.1.4 Excavation for Channel Slope Protection. The channel slope protection shall be excavated 12 inches below the final lines and grades as shown on the drawings.

3.1.5 Temporary Stockpiles. Temporary stockpiles shall be kept neat with well-drained slopes, giving due consideration to drainage at all times. Stockpiles of suitable 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 unsuitable, such material shall be removed and replaced with suitable material from approved sources at no additional cost to the Government. The stockpile(s) shall be no more than 8 feet high with side slopes no steeper than 1 vertical on 2 horizontal. Stockpiles shall be placed in an orderly manner at a distance from the banks of the trench equal to the depth of the excavation. The Contractor shall separate the material types during the excavations and shall place them into separate stockpiles. Geotextile specified in SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING, paragraph 2.1 GEOTEXTILE shall be used to separate the temporary stockpile material and the existing seepage berm.

3.1.6 Disposal of Excess Materials. Excess and unsuitable materials shall be disposed of off site and at no additional cost to the Government.

3.1.7 Disposal of Unsuitable Materials. The Contractor shall properly dispose of all unsuitable materials off site and at no additional cost to the Government.

3.2 FOUNDATION PREPARATION.

3.2.1 General. The foundation shall be prepared to the lines, grades, and dimensions as shown on the drawings. The foundation receiving backfill, backfills around the concrete structures, and all partially completed fill shall be kept thoroughly drained. Drainage to areas outside the construction limits will be allowed only after the Contractor has submitted to the Contracting Officer a copy of the conveyance that permission from the appropriate landowner(s) for such drainage has been obtained. The Contractor shall be solely responsible for any and all damages, claims for damages, and liability of any nature whatsoever arising from drainage to areas outside the construction limits. No backfill shall be placed upon frozen ground.

3.2.2 Manholes and Pipes. Loose, unsuitable, and unstable materials shall be removed. Unstable materials will be determined in the field by the Contracting Officer. When concrete is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation.

3.2.3 Replacement of Unsuitable and Unstable Materials. Unsuitable and unstable materials that are removed from the bottom of the excavated areas shall be replaced with suitable like material placed in layers not exceeding 6 inches loose thickness. A minimum of 6 complete passes shall be performed on replacement layers not to exceed 6 inches in loose thickness.

3.2.4 Preparation of Impervious Foundations. The Contractor shall prepare the bottom of the excavation consisting of impervious materials prior to constructing concrete manholes, reinforced concrete pipe, placing fills, and backfills. In preparing the foundations, the Contractor shall remove loose materials and replace unsuitable and unstable materials as specified in paragraph Replacement of Unsuitable and Unstable Materials. The Contractor

shall complete the preparation by compacting the bottom of excavations consisting of impervious materials with compaction equipment meeting the requirements specified in paragraph EARTHWORK EQUIPMENT. A minimum of 6 complete passes shall be performed.

3.2.5 Preparation of Pervious Foundations. The Contractor shall prepare the bottom of the excavation consisting of pervious materials prior to constructing concrete manholes, reinforced concrete pipe, fills, and backfills. In preparing the foundations, the Contractor shall remove loose materials and replace unsuitable and unstable materials as specified in paragraph Replacement of Unsuitable and Unstable Materials. The Contractor shall complete the preparation by compacting the bottom of excavations consisting of pervious material with vibratory compactors meeting the requirements specified in paragraph EARTHWORK EQUIPMENT. A minimum of 6 complete passes shall be performed.

3.3 MATERIALS TESTING.

3.3.1 General. Material testing shall be performed by a validated commercial testing laboratory or engineering firm, which performs soil and material testing and inspection. All testing of backfills materials shall meet the minimum requirements specified herein. If the Contracting Officer suspects that the materials may have changed or when conditions exist as defined in paragraph Displacement of Lateral, Collector and Discharge Pipes, the Contracting Officer may require more frequent testing intervals than that specified below at no additional cost to the Government.

3.3.2 Soil Classification Tests. Soil classification tests shall be performed in accordance with ASTM D 2487. The Contractor shall perform one (1) classification test from each source and for every 150 cubic yards of backfill materials placed or at least once per day. One classification test shall be required for each material type the Contractor intends to use as backfill. The Contractor shall submit the results of these tests within 24 hours after in-place testing of pervious backfills and 48 hours after in-place testing of impervious backfills. Additional tests supplementing those specified herein may be required by the Contracting Officer if noticeable changes in the material occur or when conditions exist as defined in paragraph Displacement of Lateral, Collector and Discharge Pipes.

3.3.3 Moisture-Density Relationships. The moisture-density relationships of the impervious materials shall be determined in accordance with ASTM D 698, Method A. The Contractor shall submit the results of the moisture density test for each in-place density test within 48 hours after in-place testing of impervious backfills. Additional tests may be required by the Contracting Officer if noticeable changes in the material occur or when conditions exist as defined in paragraph Displacement of Lateral, Collector and Discharge Pipes.

3.3.4 Water (Moisture) Content Tests. Determination of in-place water content shall be performed in accordance with ASTM D 2216 and shall be performed on all in-place density tests. Drying back the soil tests with a microwave oven shall be prohibited for the quality control record water content tests. The Contractor shall submit the test results to the Contracting Officer test within 48 hours after in-place testing of impervious backfills. Additional tests may be required by the Contracting Officer if noticeable changes in the material occur or when conditions exist as defined in paragraph Displacement of Lateral, Collector and Discharge Pipes.

Backfill materials not meeting the required specifications for water content shall require a retest after corrective measures have been applied.

3.3.5 In-Place Density Testing For Impervious Materials. The in-place density tests shall be performed on impervious materials. In-place density shall be determined in accordance with ASTM D 2937 and/or ASTM D 1556. At least one in-place density tests per lift or per working day, whichever is greater. The in-place soil density shall be compared to the requirements of paragraph Compaction of Backfills. Backfill materials not meeting the required specifications for in-place density shall require a retest after corrective measures and additional compaction have been completed.

3.3.6 Additional Testing. The Contracting Officer may request additional tests at no additional cost to the Government if:

- (1) There is reason to doubt the adequacy of the compaction;
- (2) Special compaction procedures are being used;
- (3) There is a noticeable change in the materials;
- (4) The Contracting Officer determines that the Contractor's testing is inadequate; or
- (5) The Contractor is concentrating backfill operations in a relatively small area.

3.3.7 Displacement of Lateral, Collector and Discharge Pipes. After other required tests have been performed and when the lateral, collector or discharge pipe trench backfills or "open cut" backfills are between 12 and 24 inches above the top of the pipe, the pipes shall be inspected to determine whether significant displacement has occurred. This inspection shall be conducted in the presence of the Contracting Officer. Pipe shall be inspected by shining a light or laser between manholes or manhole locations, or by the use of television cameras passed through the pipe. If, in the judgment of the Contracting Officer, the interior of the pipe shows poor alignment or any other defects that would cause improper functioning of the system, the defects shall be remedied as directed at no additional cost to the Government.

3.4 PLACEMENT AND COMPACTION OF FILLS AND BACKFILLS.

3.4.1 General. Fills and backfills shall be to the lines, grades, and dimensions shown on the drawings. If not indicated on the drawings, the final lines and grades shall match the existing adjacent lines and grades. Backfill material shall consist of satisfactory material as specified in paragraph MATERIALS. The backfill material shall be placed or spread in layers as specified or as shown on the drawings prior to compaction. The Contractor shall properly drain and seal the backfill surface at the end of each work day. No backfill shall be placed and compacted against concrete that is less than 7 days old.

3.4.2 Moisture Control for Impervious Material. The Contractor shall control the moisture content of the compacted backfill material. No material shall be compacted with an in-place moisture content more than 2.0 percent above nor less than 2.0 percent below optimum moisture content determined by testing as specified in paragraph Moisture-Density Relationships. The

moisture content of the fill material shall be determined by performing moisture control in accordance with ASTM D 2216 and specified in paragraph Water (Moisture) Content Tests. The Contractor shall perform the necessary work in moisture control to bring the backfill materials within the moisture content range specified above. If the backfill materials are too wet, it shall be spread out and disked to hasten drying to within the specified water content limits. If the borrow material is too dry, it shall either be pre-wet in the borrow area and stockpile, or sufficient moisture shall be uniformly distributed and blended into each layer of placed soils prior to compaction. No additional payment will be made for any moisture control modification.

3.4.3 Compaction of Backfills.

3.4.3.1 Backfill of Manholes, Lateral, Collector, and Discharge Pipes. The Contractor shall place and compact at least 12 inches of pervious material as pipe bedding for the lateral pipes and collector pipes prior to placing the lateral pipes and collector pipes as shown on the drawings. Compaction of bedding material shall conform to paragraph 3.2.5 Preparation of Pervious Foundations. The Contractor shall place flowable fill, as specified in paragraph Flowable Fill, according to DWG C-503 around the lateral pipes and collector pipes. The Contractor shall place flowable fill, as specified in paragraph Flowable Fill, to the dimensions, elevations and/or callout shown on the drawings. The Contractor shall take provisions not to "float" the lateral, collector or discharge pipes when placing the flowable fill. No additional payment will be made if any of the pipes "float" and need to be adjusted to the correct elevation/location. The Contractor shall also alternate placement of flowable fill on each side of centerline of pipes as to not cause excessive lateral displacement, or such laterally displaced pipe shall be adjusted to the correct location at no additional cost to the Government.

3.4.3 Impervious Material Fills and Backfills. When the water (moisture) content and conditions of the spread layers are satisfactory, each layer shall be compacted to a minimum of 95 percent of the maximum dry density as determined by the moisture-density relationship determined in paragraph Moisture-Density Relationships. Determination of in-place density shall be in accordance with ASTM D 1556 or ASTM D 2937 and specified in paragraph In-Place Density Testing For Impervious Materials. The backfill material shall be placed and spread in layers, the first layer not more than 6.0 inches loose thickness and the succeeding layers not more than 8.0 inches loose thickness. Portions of the backfills where the compacting equipment cannot reach for any reason shall be compacted to required density with pneumatic backfill tampers and power tamping rammers. Layer thickness shall not exceed 4.0 inches prior to compaction when pneumatic backfill tampers and power tamping rammers are used for compaction.

3.4.4 Topsoil Replacement. The topsoil shall be replaced with a minimum thickness of 12 inches. The layers shall be compacted by 2 passes with a tracked dozer or equal. The topsoil finished grades shall match the lines and grades of the adjacent existing surfaces. Upon replacing the topsoil, all disturbed areas shall be dressed smooth and rolled with a smooth drum roller for the establishment of turf.

3.4.5 Final Grade in Areas with Gravel Road. In areas where excavation included the removal of existing gravel road, the excavated area will be covered with new gravel road consisting of pervious materials. Geotextile

specified in SECTION 31 22 40 - GEOTEXTILE AND SILT FILTER FENCING, paragraph 2.1 GEOTEXTILE shall be used to separate the impervious and pervious materials. The pervious material will be placed with vibratory compactors meeting the requirements specified in paragraphs EARTHWORK EQUIPMENT. A minimum of 6 complete passes shall be performed. The gravel road varies in thickness from 10 inches to 13.5 inches and takes up most of/more than the 12 inches of the fill that would be topsoil elsewhere.

3.5 GRADE TOLERANCES. The location, grades, and dimensions shall conform to the applicable cross sections on the drawings unless otherwise specified. A tolerance of two-tenths of one foot above the prescribed grade and cross section shown will be permitted in the final dressing. The above tolerance will be permitted provided that there are no abrupt humps or depressions in surfaces.

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SECTION 31 22 40 - GEOTEXTILE AND
SILT FILTER FENCING

PART 1 GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, material, and equipment and performing all operations required for furnishing, hauling, and placing the geotextile and silt filter fencing, complete, as specified herein and shown on the contract drawings, and maintaining the geotextile and silt filter fencing until acceptance.

1.2 QUALITY CONTROL.

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

- (a) Materials
- (b) Installation

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

1.3 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

D 4632	Grab Breaking Load and Elongation of Geotextiles
D 4751	Determining Apparent Opening Size of a Geotextile
D 4833	Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products

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 to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.4.1 Certificates. GA. Submit certificates of compliance attesting that the geotextile meets specification requirements.

1.4.2 Certificates. GA. Submit certificates of compliance attesting that the silt filter fencing meets specification requirements.

1.4.3 Statement. FIO. Method of Installation. Submit the method of installation, equipment to be used, and the manufacturer's recommendation of placement and securing the geotextile and silt filter fencing.

1.5 SHIPMENT AND STORAGE. The geotextile shall be furnished in a protective wrapping which shall protect the geotextile from direct sunlight,

ultra-violet rays, temperatures greater than 140 degree Fahrenheit, mud, dirt, dust and debris. To the extent possible, the fabric shall be maintained wrapped in a heavy-duty protective covering. The silt filter fencing shall be furnished and stored per the manufacturer's recommendations.

PART 2 PRODUCTS

2.1 GEOTEXTILE. The geotextile shall be of nonwoven sheet construction and consist of long chain polymeric fabric composed of polypropylene, polyethylene, polyester, polyamide or polyvinylidene-chloride fibers weighing 4.0 to 8.0 ounces per square yard, and shall contain stabilizers and/or inhibitors added to the basic plastic, if necessary, to make the filaments resistant to deterioration due to ultraviolet and heat exposure. The fibers shall be oriented into a random web and stabilized whereby they retain there positions relative with each other. The geotextile shall be free of any chemical treatment or coating which reduces permeability and shall be inert to chemicals commonly found in soil. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile. The geotextile shall conform to the following physical property requirements:

<u>Physical Property</u>	<u>Test Procedure</u>	<u>Acceptable Values*</u>
Tensile Strength (Wet)	ASTM D 4632	120 pound minimum in any principal direction
Elongation - (Wet)	ASTM D 4632	At least 15 percent but no greater than 80 percent in any principal direction
Apparent Opening Size	ASTM D 4751	No finer than No. 100 No coarser than No. 70 U.S. Standard Sieve
Puncture Strength	ASTM D 4833	75 pounds minimum

*Unless stated otherwise all numerical values represent average roll values (i.e. any roll in a lot should meet or exceed the minimum value but not exceed the maximum value listed in the table.)

2.2 SILT FILTER FENCING. The silt filter fencing shall consist of new unused material. The silt filter fencing shall have a minimum width of 3 feet and shall be fitted with posts and prefabricated post loops or straps spaced between 7 and 10 feet apart. The fabric shall not be attached to the posts with staples or nails. Posts shall be supplied meeting the manufacturer's recommendations and shall have a minimum length of 4 feet. The silt filter fabric shall consist of woven long chain polymeric fabric composed of polypropylene, polyethylene, polyester, polyamide or polyvinylidene-chloride fibers weighing 3.0 to 5.0 ounces per square yard, and shall contain stabilizers and/or inhibitors added to the basic plastic, if necessary, to make the filaments resistant to deterioration due to ultraviolet and heat exposure. The fibers shall be stabilized whereby they retain their positions relative with each other. The filter fabric shall be free of any chemical treatment or coating which reduces permeability and shall be inert to chemicals commonly found in soil. The edges of the filter fabric shall be finished to prevent the outer fiber from pulling away from the geotextile. The silt filter fencing fabric shall conform to the following physical property requirements specified below:

<u>Physical Property</u>	<u>Test Procedure</u>	<u>Acceptable Values*</u>
Tensile Strength (Wet)	ASTM D 4632	100 pound minimum in any principal direction
Elongation - (Wet)	ASTM D 4632	At least 10 percent but no greater than 30 percent in any principal direction
Apparent Opening Size	ASTM D 4751	No finer than No. 50 No coarser than No. 30 U.S. Standard Sieve
Puncture Strength	ASTM D 4833	55 pounds minimum

*Unless stated otherwise all numerical values represent average roll values (i.e. any roll in a lot should meet or exceed the minimum value but not exceed the maximum value listed in the table.)

PART 3 EXECUTION

3.1 GEOTEXTILE INSTALLATION AND PROTECTION.

3.1.1 Installation Around Pipe and Manhole Joints. The Contractor shall install and secure the geotextile for the reinforced concrete joints sections. The geotextile fabric wrap shall be centered on the concrete joints a minimum of 18 inches on each side. Ends and edges shall lay flat against pipe. If Contractor has difficulty maintaining the end and edges, ends and edges shall be tacked with approved material at no additional cost to the Government.

3.1.2 Protection of Geotextile. The geotextile shall be protected at all times during construction from contamination by surface run-off and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Except as otherwise specified, the geotextile shall be covered with stone protection within 24 hours of placement. Any damage to the geotextile during its installation or during placement of stone protection and crushed stone surfacing material shall be replaced by the Contractor at no additional cost to the Government.

3.2 SILT FILTER FENCING. The Contractor shall install and protect the temporary silt filter fencing per the manufacturer's recommendations in areas shown on the drawings. The silt filter fencing shall be removed by the Contractor upon request by the Contracting Officer.

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xxx

SECTION 31 26 11

REINFORCED CONCRETE PIPE FOR DISCHARGE PIPE, PRECAST CONCRETE DISCHARGE PIPE
MANHOLES, CONCRETE FLARED END SECTION AND DUCK-BILL TYPE CHECK VALVE

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, material, and equipment, and performing all operations necessary for the reinforced concrete discharge pipe, precast concrete discharge pipe manholes, concrete flared end section, duck-bill type check valve and appurtenances, as specified herein and as shown on the drawings.

1.2 QUALITY CONTROL.

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

- (1) Compaction
- (2) Installation of reinforced concrete discharge pipe
- (3) Installation of geotextile.

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

1.3 APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

C 361-95	Reinforced Concrete Low-Head Pressure Pipe
C 655-95 (Rev A)	Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe
C 1107-91 (Rev A)	Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
D 1310-86 (R 1990)	Flash Point and Fire Point of Liquids by Tag Open-Cup Apparatus
D 3776-85 (R 1990)	Mass per Unit Area (Weight) of Woven Fabric

1.3.2 American Association of State Highway and Transportation
Officials (AASHTO).

AASHTO M-198 B	Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets
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1.3.3 American Concrete Pipe Association (ACPA).

"Concrete pipe Design Manual", Nineteenth Printing (Revised) October, 2011.

1.3.4 U. S. Army Corps of Engineers Manual (EM).

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

1.3.5 Metropolitan Sewer District (MSD).

"Standard Construction Specifications For Sewers and Drainage Facilities", 2009, and "Standard Details of Sewer Construction", 2009.

1.4 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having and "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.4.1 Instructions. Placing Pipe and Alignment Plan; "GA". Printed copies of the manufacturer's recommendations for installation procedures of the material being placed shall be furnished prior to installation. This also includes submitting a plan drawing of pipe layout and documentation by manufacturer verifying type(s) of joints and that type(s) of joint are/is appropriate and will seal properly for the intended use and installation shown on the drawings.

1.4.2 Reinforced Concrete Pipe for Discharge Pipe. GA. Submit manufacturer's certificate of compliance for the reinforced concrete pipe.

1.4.3 Nonshrink Grout. GA. Submit manufacturer's certificate of compliance for the nonshrink grout material; and the method and equipment proposed for grout placement.

1.4.4 Manhole Certificates. Manhole Certification; "GA". Certified copies of test reports and structural designs demonstrating conformance to applicable manhole component specifications, including frames and lids/covers, before manholes are installed.

1.4.5 Preformed Flexible Joint Sealants; "GA". Submit manufacturer's literature certifying compliance with MSD Standard Construction Specifications For Sewers and Drainage Facilities, PART 4 PIPE SEWER CONSTRUCTION, Section G. Structures, Paragraph 4. Precast Manholes, Inlets and Appurtenances, Subparagraph c.

1.4.6 Pipe Joint Gaskets; "GA". Submit manufacturer's literature certifying compliance with MSD Standard Construction Specifications For Sewers and Drainage Facilities for pipe joint gaskets for reinforced concrete pipe.

1.4.7 Flared End Section with Cast-In-Place Headwall; "GA". Submit manufacturer's detailed shop drawings, catalog cuts and literature certifying compliance with MSD Standard Construction Specifications For Sewers and Drainage Facilities for the flared end section with cast-in place headwall.

1.4.8 Duck-Bill Type Check Valve; "GA". Submit manufacturer's detailed shop drawings, catalog cuts and/or literature certifying compliance with the specifications for the duck-bill type check valve.

1.5 DELIVERY, STORAGE, AND HANDLING.

1.5.1 Delivery and Storage. Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. Materials shall not be stored directly on the ground. The inside of pipes, manhole sections and fittings shall be kept free of dirt and debris. Gasket materials and plastic materials shall be protected from exposure to the direct sunlight over extended periods.

1.5.2 Handling. Materials shall be handled in such a manner as to ensure delivery to the work site in sound, undamaged condition. Pipe shall be carried to the trench excavation, not dragged.

PART 2 PRODUCTS

2.1 MANHOLES AND APPURTENANCES.

2.1.1 Discharge Pipe Manholes. The discharge pipe manholes shall conform to the lines, grades, and dimensions as shown on the drawings. The top elevation of the manhole cover shall be flush with the surrounding ground surface. The manhole sections shall be 60-inch interior diameter (ID) precast reinforced concrete manhole sections. The precast concrete manhole sections shall conform to the 2009 Standard Construction Specifications For Sewers and Drainage Facilities and to MSD Standard Details of Sewer Construction SHEET 21 and other applicable sheets. Discharge pipe manholes shall be complete with precast concrete manhole sections, floors, risers, tapered risers, adapter rings, precast closed-type cast iron manhole covers and shall be designed and manufactured in accordance with the current MSD Standards and Specifications. Manhole steps shall be embedded into the wall a minimum of 3.0 inches but shall not be extended on the outside of the structure. Manhole steps shall be cast into the reinforced concrete manhole wall at locations as shown on the drawings and MSD Standard Details. Flexible watertight elastomeric O-ring joint conforming to ASTM C 443 or preformed butyl mastic joint sealants conforming to AASHTO M-198B or ASTM C 990 shall be used. Prior to placing the joint sealants, the concrete joint surfaces shall be clean and dry. Either elastomeric O-rings or double rings, coils or ropes of butyl mastic joint sealants shall be applied to each concrete joint per the manufacturer's product instructions. The oversized pipe openings shall be cast into the manhole sections to allow for field adjustments.

2.1.2 Discharge Pipe Manhole Frames and Lids/Covers. The discharge pipe manholes frames and lids shall be heavy duty, constructed of cast gray iron conforming to ASTM A 48, Class 35B, and shall have a minimum tensile strength of 35,000 pounds per square inch. The frames and lids shall be designed for AASHTO H-20 loadings conform to MSD Standard Details SHEETS 52 and 53. The relief well manhole frames shall have clear round openings of as shown on MSD Standard SHEET 52. The lids/covers shall be solid closed-type heavy duty cast gray iron with at least one lifting notch and conform to MSD SHEET 53. The frames shall be embedded into the precast manhole covers in accordance with manufacturer's recommendations.

2.1.3 Manhole Steps. The manhole steps shall be constructed of cast gray iron, copolymer polypropylene plastic coated ½-inch, grade 60 steel reinforcement step, or ductile iron castings. The step materials shall have a minimum tensile strength of 35,000 pounds per square inch. The gray iron castings shall conform to ASTM A 48, Class 35B. The ductile iron castings shall conform to ASTM A 536, Grade 80-56-06.

2.1.4 Manhole Joint Sealants.

2.1.4.1 Elastomeric O-ring Joint Sealants. The elastomeric O-ring joint sealants shall be high quality material and conform to ASTM C 443.

2.1.4.2 Flexible watertight preformed butyl Mastic Joint Sealants. The flexible watertight preformed butyl mastic joint sealants shall conform to AASHTO M-198 Type B or ASTM C 990. The sealants shall consist of high quality butyl rubber with at least 98% solids to minimize hardening, shrinkage, and oxidation. The joint sealants shall be at least ½-inch, preformed coils or ropes and supplied in ready-to-apply forms. The preformed joint sealant coil

or rope shall be applied so the ends meet and not overlapped.

2.2 REINFORCED CONCRETE DISCHARGE PIPE. The reinforced concrete pipe for the discharge pipe shall conform to the material requirements as summarized in Part 2, Section G.5 of MSD 2009. Reinforced concrete pipe used for storm drainage facilities shall be manufactured in accordance with and conform to ASTM C 76, Strength Class III, or ASTM C 655 with shell thickness designated "Wall B" and with Circular Reinforcement in Circular Pipe.

2.3 PIPE JOINTS. Joints for RCP used for discharge pipe shall be Type A conforming to Part 2, Sections H.1 and H.2 of MSD 2009 Specifications.

2.4 BEDDING MATERIALS. Bedding materials for all RCP shall conform to the requirements in Part 2, Section K of MSD 2009. Bedding Class MSD 1 shall be used for pipes less than or equal to 27 inches in diameter. Bedding Class MSD 2 shall be used for pipes greater than or equal to 30 inches in diameter.

2.5 NONSHRINK GROUT. The nonshrink grout shall consist of a prepackaged material conforming to the requirements of ASTM C 1107.

2.6 FLOWABLE FILL. The flowable fill to be used by the Contractor shall meet the specifications in Section 621 - FLOWABLE FILL, Article 621.4 of the MoDOT Missouri Standard Specifications for Highway Construction, dated 2011. The flowable fill for the lateral and collector pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and as shown on the drawings.

2.7 BACKFILL MATERIALS. The backfills for the manholes and discharge pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and as shown on the drawings.

2.8 CONCRETE FLARED END SECTION WITH CAST-IN-PLACE HEADWALL. The reinforced concrete flared end section and cast-in-place headwall shall conform to the 2009 MSD specifications and standards and to Sheet 61 of the MSD Standard Details of Sewer Construction. The flared end section and cast-in-place headwall shall be furnished and installed by the Contractor, in accordance to the manufacturer's recommendations, at the discharge end of the 30" RCP outfall pipe as shown on drawings.

2.9 DUCK-BILL TYPE CHECK VALVE. A duck-bill type check valve shall be furnished and installed by the Contractor, in accordance to the manufacturer's recommendations, at the discharge end of the 30" RCP outfall pipe as shown on drawings. The check valve shall be of elastomer construction with eccentric flat bottom and curved bill, and shall attached to the 30" RCP using a slip-on, clamped connection with pins, similar or equal to Tideflex Series TF-1 check valve. The port area shall contour down to a curved duckbill which shall allow passage of flow in one direction while preventing reverse flow. The valve shall be installed so it discharges in the downstream direction, away from the existing box culvert. The length, bill height and cuff length of the duck-bill check valve shall be sized by the check valve manufacturer to properly connect to the 30" RCP pipe. The company name, plant location, valve size and serial number shall be bonded to the check valve, and the valve shall be manufactured in the USA. Details of the materials and installation of duck-bill type check valve shall be submitted to the Government for approval. **Note: The Contractor shall use the check valve dimensions to properly size the RCP flared end section, so that the base of the flared end section extends to at least the end of the check valve.**

PART 3 EXECUTION

3.1 PRECAST CONCRETE OPERATIONS. The Contractor shall construct the required precast concrete components to include but not be limited to the items specified in SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM AND MANHOLES, ASTM C 76, ASTM C 478, SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings. One bronze survey marker, as specified in paragraph BRONZE SURVEY MARKERS, shall be embedded in each relief well manhole cover as shown on the drawings.

3.2 EXCAVATION AND FOUNDATION PREPARATION. The excavation and foundation preparation to construct the discharge pipe manholes and discharge pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK. The Contractor shall excavate and prepare the foundations to the lines, grades, and dimensions as shown on the drawings. The Contractor shall excavate below the bottom of the manholes and all reinforced concrete pipes as shown on the drawings. The Contractor shall place and compact sand classified SP or SW) beneath the pipes in accordance with SECTION 31 22 00 - EARTHWORK and as shown in the drawings. Pipes shall be fully supported by bedding along their entire length. The excavation for the manholes shall conform to the lines, grades, and dimensions as shown on the drawings and as specified in SECTION 31 22 00 - EARTHWORK.

3.3 NONSHRINK GROUT PLACEMENT. Nonshrink grout shall be used to fill the voids between pipe and structures and patching holes in concrete. Temporary forms or collars shall be provided to contain the grout until the grout has set. Grout that has not been placed, for any reason, within 30 minutes after mixing shall not be used and shall be removed from the job site. The Contractor shall submit to the Contracting Officer for approval, the method and equipment proposed for placement of the grout. The nonshrink grout shall be mixed, placed, and cured in accordance with the manufacturer's recommendations.

3.4 INSTALLATION OF DISCHARGE PIPE.

3.4.1 General. The discharge pipe is to be placed at the locations shown on the drawings. Prior to installing the discharge pipe, excavation and foundation preparation shall have been completed as prescribed in paragraph EXCAVATION AND FOUNDATION PREPARATION. Under no circumstances shall the pipe be laid in water, or when conditions or the weather are unsuitable for work. The pipe will be carefully inspected by the Contracting Officer immediately before it is laid and defective pipe will be rejected. Proper facilities shall be provided for lowering sections of pipe into place, and pipe shall be cleaned and lowered into position in such a manner as to avoid damage to the pipe. The pipe shall be laid on a foundation to the grades and alignment as shown on the drawings. The pipe shall be supported in such a manner that does not damage the pipe or pipe joints and such that the pipe is at the grade and alignment shown on the drawings. Each section of pipe shall rest upon the pipe bed for its full length with recesses excavated or formed to accommodate the joints. Any pipe which has its grade or joint disturbed after laying shall be taken up and relaid. Any section of pipe already laid which is found to be defective or damaged shall be taken up and relaid or replaced as directed by the Contracting Officer, without additional cost to the Government.

3.4.2 Pipe Joints. Joints between sections of reinforced concrete pipe and between the pipe and the flared end section shall be in accordance with ASTM C 361 and the 2009 MSD Specifications. Gaskets shall not have more than one factory-fabricated splice. Gaskets shall be as recommended by the particular manufacturer in regard to use of lubricants, cements, adhesives, and other special installation requirements. Surfaces to receive lubricants, cements, or adhesives shall be clean and dry. Gaskets shall be affixed to the

pipe not more than 24 hours prior to the installation of the pipe, and shall be protected at all times from the sun, blowing dust, and other deleterious agents. Gaskets shall be inspected before installing the pipe; any loose or improperly affixed gaskets shall be removed and replaced. The pipe shall be aligned with the previously installed pipe, and the joint pulled together. If, while making the joint, the gasket becomes loose and can be seen through the exterior joint recess when the joint is pulled up to within one inch of closure, the pipe shall be removed and the joint remade.

3.4.3 Discharge Pipe. During installation, the pipe shall be handled with care. After all joining of sections has been accomplished, backfill shall be placed as specified and as shown on the drawings. The maximum tolerance for the placement of the discharge manholes and pipe system shall be 1.0-inch plus or minus in any and all directions.

3.5 INSTALLATION OF MANHOLES. All pipe and manhole components shall conform to the requirements specified herein. Each discharge pipe manhole section, riser, cover, and all other components shall be carefully examined before being permanently placed and secured. Defective or damaged components and sections shall not be used. Manholes shall be installed in accordance with these specification requirements and as shown on the drawings. The discharge pipe manhole sections shall be laid to the lines and grades as shown on the drawings. Manhole sections shall be lifted into place without damaging such sections. The maximum tolerance for the placement of the relief well manholes and collector system shall be 1.0-inch plus or minus in any and all directions.

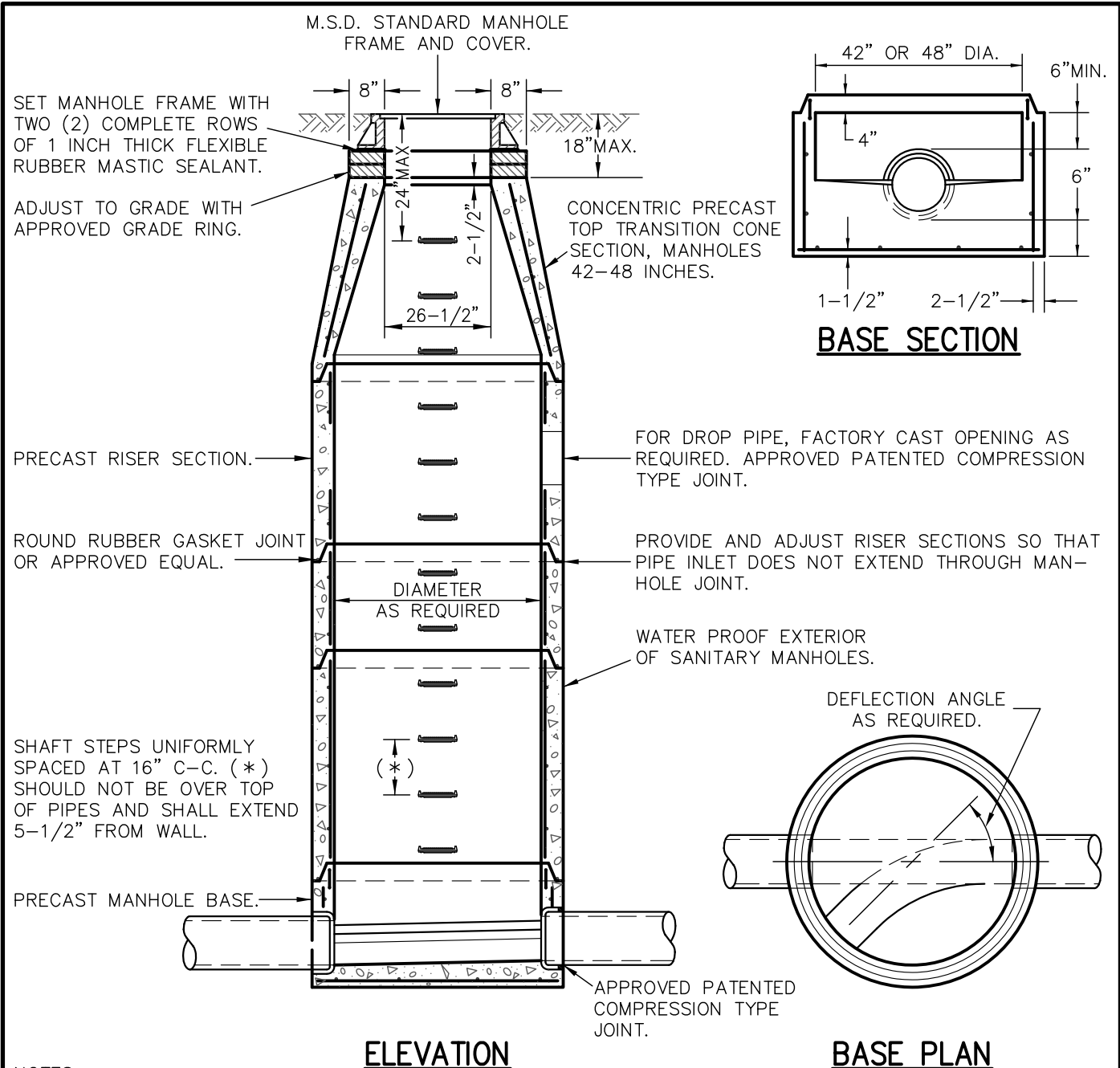
3.6 MANHOLE JOINTS. The joints between the manhole sections shall be made with elastomeric O-rings or flexible watertight preformed butyl mastic joint sealants that conform to the requirements specified in SECTION 33 27 20-paragraph FLEXIBLE WATERTIGHT PREFORMED BUTYL MASTIC JOINT SEALANTS. Prior to placing the joint sealants, the concrete joint surfaces shall be clean and dry. Elastomeric O-rings or double rings, coils or ropes of butyl mastic joint sealants shall be applied to each concrete joint per the manufacturer's product instructions. Pipes connecting to the manholes shall be aligned through the preformed openings and secured with non-shrink grout that conforms to or exceeds the requirements in paragraph BEDDING MATERIALS and as shown on the drawings.

3.7 FLOWABLE FILL AND BACKFILL MATERIALS. After all pipe and manholes are in place, flowable fill shall be poured around the pipes and around the manholes to the dimensions, elevations and/or callouts shown on the drawings. The backfill materials for the relief well manholes, collector manholes, lateral pipes and collector pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and installed as shown on the drawings. The final backfill surface including the topsoil shall be flush with the surrounding ground surfaces.

3.8 FINAL DRESSING OF ALL DISTURBED AREAS. All disturbed areas to be covered with turf shall be dressed smooth. All areas to be covered with concrete will be dressed smooth and paved in accordance with the specified applicable sections in DIVISION 03 - CONCRETE.

3.9 TESTING. Air test of the completed installation will not be required. Visual inspection of the work in progress and shortly after completion will be the acknowledgement of field approval. The final acceptance of the work will be the responsibility of the Contracting Officer.

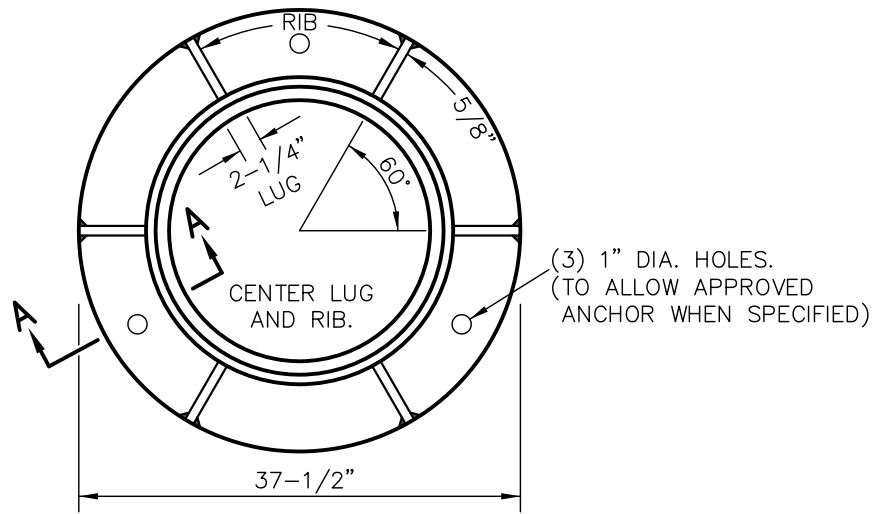
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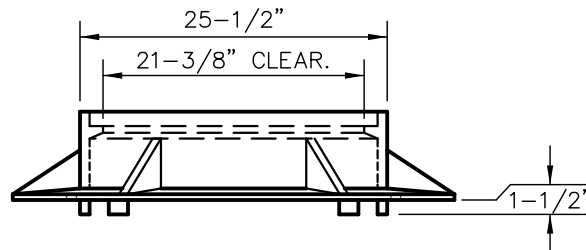
NOTES:

- 1) THE MINIMUM INSIDE DIAMETER FOR THE BASE AND RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES. MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
- 2) FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE 1 INCH HIGHER THAN THAT OF OUTGOING PIPE.
- 3) PIPE SIZES LARGER THAN 24 INCH DIAMETER MAY REQUIRE MANHOLE DIAMETERS OF 60 INCH, 72 INCH OR 96 INCH AS DETERMINED BY OUTSIDE DIAMETERS AND ORIENTATIONS OF CONNECTING PIPES.
- 4) ECCENTRIC CONES SHALL BE USED ON DIAMETERS 60 INCH AND LARGER. STEPS SHALL EXTEND DOWN VERTICAL WALL OF CONE.
- 5) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL OF MANHOLES ON PIPE DIAMETERS LARGER THAN 24 INCH AND ALSO FOR THOSE STRUCTURES WITH A DROP PIPE CONNECTION.

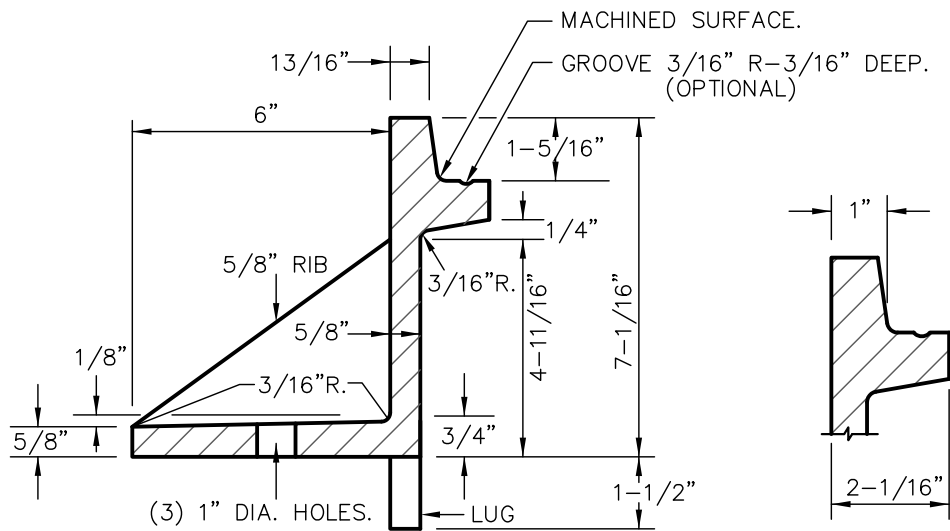
PRECAST CONCRETE MANHOLE	METROPOLITAN ST. LOUIS SEWER DISTRICT <i>Standard Details of Sewer Construction</i>		
	Dr. WSH/SAM Ch. J.C.K.	2009	SHEET 21



PLAN



ELEVATION



SECTION A-A
(230 lbs.)

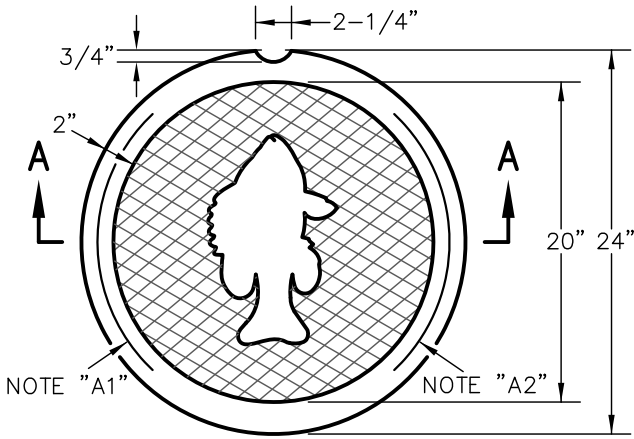
**CAST IRON MANHOLE
FRAME**

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

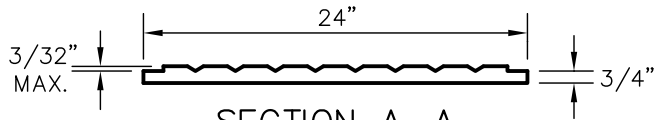
Dr. DAB/SAM
Ch. J.C.K.

2009

SHEET 52

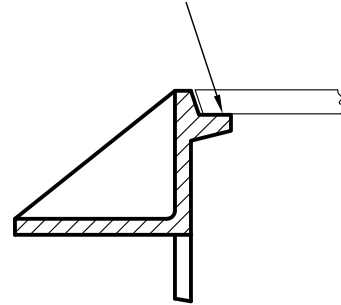


85 LBS.



SECTION A-A
STANDARD CAST IRON
INLET COVER

MACHINE CONTACTING SURFACES
FOR SEAT OF STANDARD MANHOLE
FRAME AND BEARING SURFACE COVERS.



NOTES

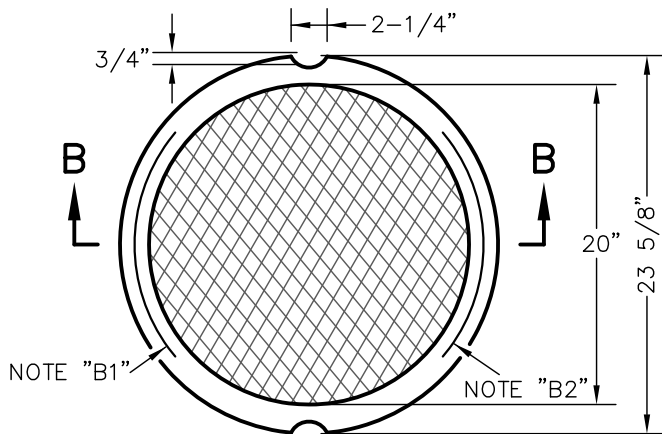
PROVIDE 1/8" RAISED
LETTERING APPROXIMATELY
3/4" TO 1" HIGH.

A1: NO DUMPING

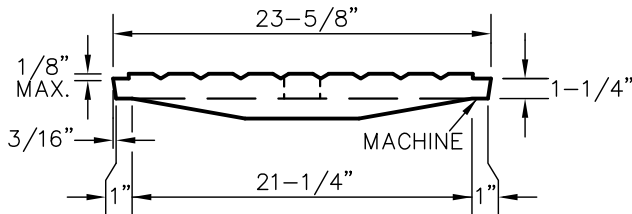
A2: DRAINS TO STREAM

B1: METRO ST. LOUIS

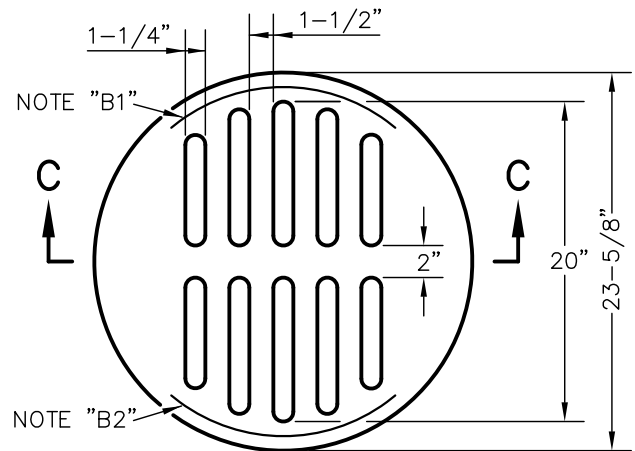
B2: SEWER DIST. SEWERS



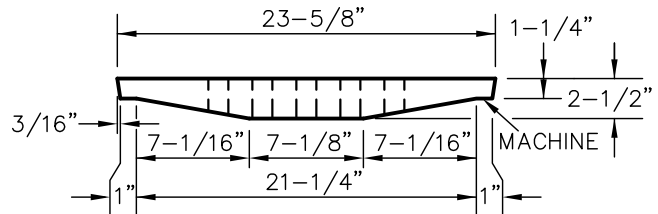
TYPE "A" 120+ LBS.



SECTION B-B
CLOSED-TYPE COVER



TYPE "B" 152 LBS.



SECTION C-C
SLOTTED-TYPE COVER

STANDARD CAST IRON MANHOLE COVERS

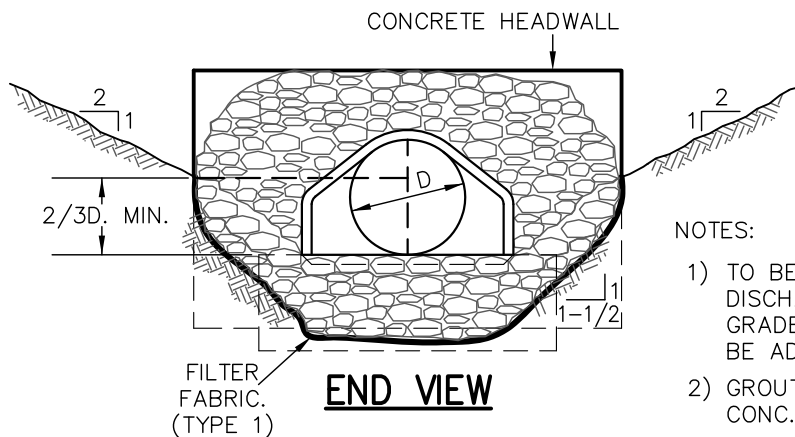
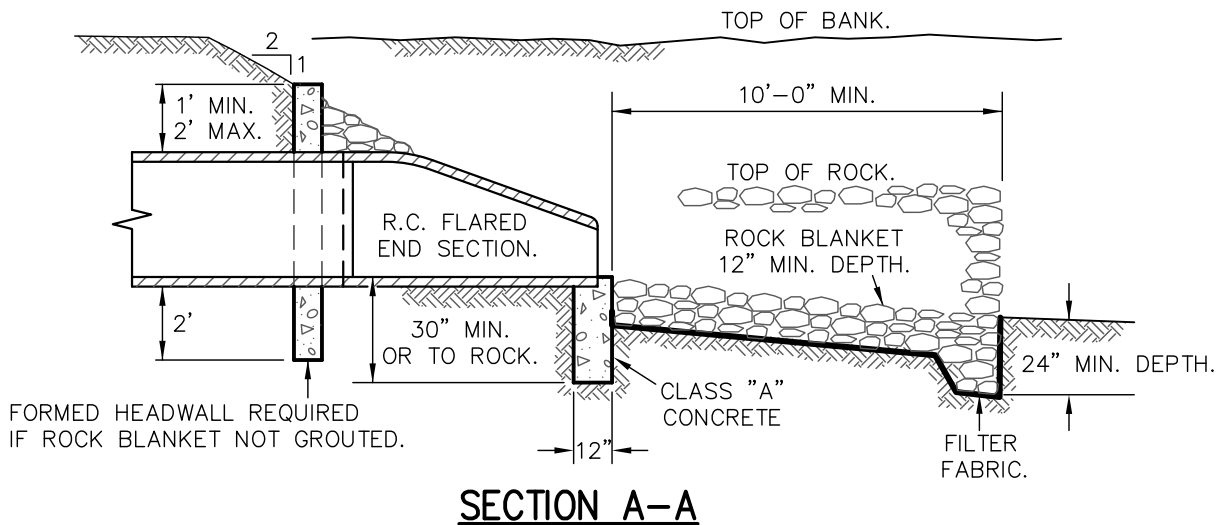
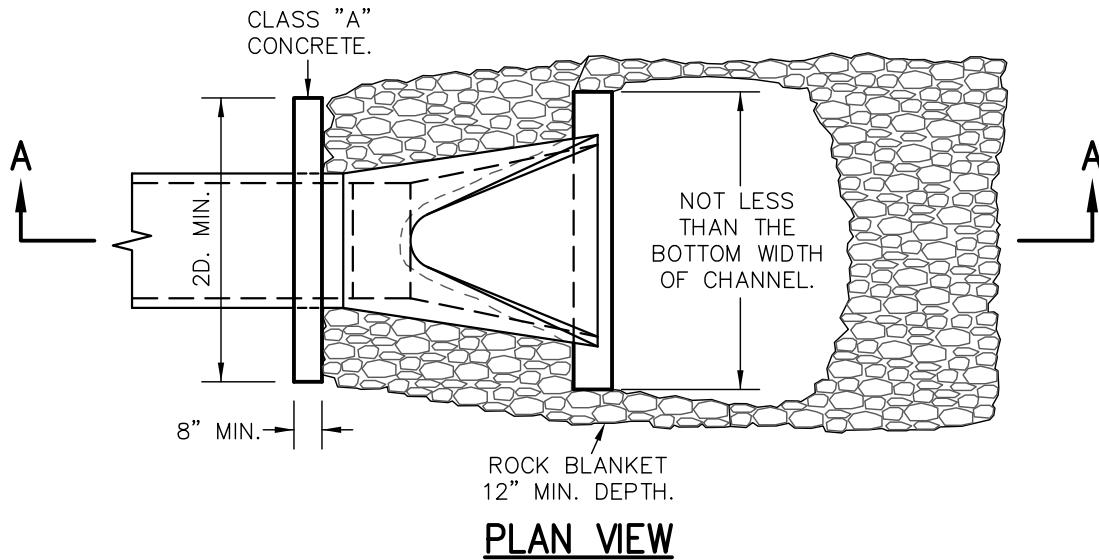
**CAST IRON COVERS FOR
MANHOLES AND INLETS**

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. RGW/SAM
Ch. J.C.K.

2009

SHEET 53



NOTES:

- 1) TO BE USED AT INTAKE AND DISCHARGE END OF PIPE. GRADE OF ROCK BLANKET TO BE ADJUSTED ACCORDINGLY.
- 2) GROUTED ROCK BLANKET OR CONC. HEADWALL REQUIRED.

FLARED END SECTION

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. WSH/SAM
 Ch. J.C.K.

2009

SHEET 61

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SECTION 32 22 70 - STONE PROTECTION

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment and materials, and performing all operations in connection with the construction of the stone protection, including foundation preparation, bedding layer, road repairs and riprap placement in accordance with these specifications and the contract drawings.

1.2 QUALITY CONTROL.

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

- (1) Foundation preparation.
- (2) Inspection at the worksite to ensure use of specified materials.
- (3) Bedding material gradation.
- (4) Bedding material placement.
- (5) Riprap gradations.
- (6) Riprap placement.

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

1.3 APPLICABLE PUBLICATION. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.3.1 American Society for Testing and Materials (ASTM).

C 127	Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

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 to the Contracting Office in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES, and shall include, but not be limited to the following:

1.4.1 Source of Stone. GA. A list of stone source or sources shall be submitted at least 30 days prior to any placement of stone protection.

1.4.2 Gradation Test Data. GA. The results of all gradations shall be submitted within 24 hours after completion of the test.

1.4.3 Certified Weight Tickets. FIO.

1.4.4 Method of Placement. GA. A detailed description of the method for placing the bedding and riprap materials shall be submitted at least 30 days prior to any placement of material.

PART 2 PRODUCTS

2.1 GENERAL. The source from which the Contractor proposes to obtain the material shall be approved by the Contracting Officer prior to the time the material will be required in the work. Stone protection material shall be durable and of a suitable quality to ensure permanence in the structure and in the climate in which it is to be used. It shall be free from cracks, seams, and other defects that would tend to increase unduly its deterioration from natural causes, and shall be free of dirt, sand, clay and rock fines.

2.1.1 Sources and Evaluation Testing. All stone shall be obtained in accordance with the provisions in SECTION 00 08 00, Clause STONE SOURCES of the Special Clauses. If the Contractor proposes to furnish stone from a source not listed in SECTION 00 08 00, Clause STONE SOURCES, the Contractor shall make such investigations as necessary to determine whether acceptable stone can be produced from the proposed source. Satisfactory service records on work outside the Corps of Engineers will be acceptable. If no such records are available, the Contractor shall make tests to ensure the acceptability of the stone. The tests to which the stone may be subjected will include petrographic analysis, specific gravity, abrasion, absorption, wetting and drying, freezing and thawing, and such other tests as may be considered necessary by the Contracting Officer. The following guidance is provided for use by the Contractor in analyzing a new source of stone. Stone that either weighs less than 155 pounds per cubic foot or has more than 2 percent absorption will not be accepted unless other tests and service records show that the stone is satisfactory. The method of tests for unit weight and absorption will be ASTM C 127. The Contractor, under the supervision of the Contracting Officer, shall take samples of stone at least 60 days in advance of the time the placing of the stone is expected to begin. The tests shall be conducted by the Contractor in accordance with applicable Corps of Engineers methods of test given in the Handbook of Concrete and Cement, and shall be performed by a validated testing laboratory. The cost of testing shall be borne by the Contractor.

2.1.2 Gradation Tests. The Contractor shall perform a gradation tests on the crushed stone bedding material in accordance with ASTM C 136 and on the different riprap sizes at the quarry in accordance with "LMVD Standard Test Method for Gradation of Riprap". The Contractor shall perform at least one gradation test on the crushed stone bedding before the start of placement and for every 5000 tons placed. The Contractor shall perform a gradation test on the riprap at the quarry in accordance with "LMVD Standard Test Method for Gradation of Riprap", a copy of which is attached at the end of this section. At least one gradation test shall be performed prior to delivery of the riprap materials to the job site and one additional gradation per 10000 tons of each size of riprap placed. The sample shall be taken by the Contractor under the supervision of the Contracting Officer, shall consist of not less than 25 tons of 140 lb topsize riprap. The sample shall be collected in a random manner which will provide a sample which accurately reflects the actual gradation arriving at the jobsite. If collected by the truckload, each truckload shall be representative of the gradation requirements. The Contractor shall provide all necessary screens, scales and other equipment, and the operating personnel

therefore, and shall grade the sample, all at no additional cost to the Government. The gradation tests shall be reported using LMV Form 602-R, Gradation Test Data Sheet. Additional tests, at the Contractor's expense, will be required if the stone furnished appears by visual inspection to be of questionable gradation.

2.2 CRUSHED STONE BEDDING. The crushed stone bedding material shall be composed of tough, durable particles, and shall be reasonably free from thin, flat and elongated pieces, and shall contain neither organic matter nor soft, friable particles in quantities considered objectionable by the Contracting Officer. Grading shall conform to the following requirements:

<u>Permissible Limits</u>	
<u>U.S. Standard Sieve</u>	<u>Percent by Weight Passing</u>
3-inch	90 -100
1 1/2-inch	35 - 70
No. 4	0 - 5

The crushed stone bedding material shall be well-graded between the limits shown. All points on individual grading curves obtained from representative samples of crushed stone bedding material shall lie between the boundary limits as defined by smooth curves drawn through the tabulated grading limits plotted on a mechanical analysis diagram. The individual grading curves within these limits shall not exhibit abrupt changes in slope denoting either skip grading or scalping of certain sizes or other irregularities, which would be detrimental to the proper functioning of the bedding layers.

2.3 RIPRAP. Riprap stone shall be placed within the limits shown on the drawings or otherwise required by the Contracting Officer. The layer thickness and size of stone to be used at each location shall be as shown on the drawings. Riprap stone shall be reasonably well graded within the weight limits for each percentage of total weight specified below. Neither the width nor the thickness of any piece of riprap shall be less than 1/3 its length. The riprap stone shall conform to the requirements of paragraph GENERAL as to quality and shall conform to the following gradations:

<u>140-Pound Topsize Riprap</u>	
<u>Percent Lighter by Weight</u>	<u>Limits of Stone Weight, lb.</u>
100	140-60
50	60-30
15	30-10

2.4 EQUIPMENT.

2.4.1 General. The Contractor shall use tractor drawn or self-propelled compaction rollers to compact the bedding material placed under the drainage pipe. Vibratory rollers and vibratory plate compactors shall be used to compact the crushed stone bedding material. All rollers and compactors shall be field checked under the direction and supervision of the Contracting Officer prior to their use on the backfill to assure that they meet the specified requirements. Any equipment that does not meet the specified requirements will not be allowed on the fill or backfill. Water jetting for compaction is strictly prohibited.

2.4.2 Vibratory Rollers. Vibratory rollers shall be used to compact pervious and crushed stone materials. The vibratory rollers shall be equipped with a smooth steel compaction drum or steel drum with pads. The level of amplitude and vibration frequency during compaction shall be maintained uniform throughout the fill zone within which it is operating. Vibratory rollers shall be operated at a frequency of vibration during compaction operations between 1,500 and 2,500 vibrations per minute (vpm). The vibratory rollers shall have a minimum centrifugal force of 15,000 pounds. Rollers shall be operated at speeds not to exceed 1.5 miles per hour.

2.4.3 Vibratory Plate Compactors. Vibratory plate compactors for compacting pervious and crushed stone materials shall be equipped with a smooth steel plate. The level of amplitude and vibration frequency during compaction shall be maintained uniform throughout the fill zone within which it is operating. Vibratory plate compactors shall be operated at a frequency of vibration during compaction operations between 5,000 and 8,000 vibrations per minute (vpm). Vibratory plate compactors shall have a minimum centrifugal force of 3,500 pounds. The vibratory plate (shoe) surface area shall be between 400 and 525 square inches.

PART 3 EXECUTION

3.1 BASE PREPARATION. The areas on which the bedding layer and riprap are to be placed shall be cleared of all debris larger than 3 inches in diameter and all woody growth shall be removed and disposed of offsite in accordance with all Federal, State, and local laws. The Contractor shall not excavate more than 75 feet ahead of the placement of the bedding material, unless otherwise permitted by the Contracting Officer.

3.2 BEDDING LAYERS TO RECEIVE RIP RAP. Bedding material shall be placed uniformly on the areas of exposed soil to receive riprap as directed by the plans and the contracting officer. The placement of the bedding material shall not be more than 75 feet ahead of the placement of the riprap material. Placing of material by methods that will tend to segregate particle sizes within the bedding will not be permitted. Compaction of the bedding layer will not be required but it shall be finished to present a reasonably even surface free from mounds, windrows or depressions.

3.3 BEDDING MATERIAL FOR PERVIOUS FOUNDATIONS. The Contractor shall prepare the bottom of the excavation consisting of bedding material prior to constructing concrete manholes, reinforced concrete pipe, fills, and backfills. In preparing the foundations, the Contractor shall remove loose materials and replace unsuitable and unstable materials as specified in SECTION 31 22 00 - EARTHWORK, paragraph EXCAVATION. The Contractor shall complete the preparation by compacting the bottom of excavations consisting of pervious material with vibratory compactors meeting the requirements specified in SECTION 31 22 00 - EARTHWORK, paragraph EARTHWORK EQUIPMENT. A minimum of 6 complete passes shall be performed.

3.4 RIPRAP. Stone for riprap shall be placed on the bedding layer in such manner as to produce a reasonably well graded mass of rock with the minimum practicable percentage of voids, and shall be constructed within the specified tolerance to the lines, grades, and elevation shown on the drawings or as directed. The placement tolerance for the various sizes of riprap are as follows: 140 pound topsize riprap of zero and not more than plus 6 inches from the slope lines and grades shown on the drawings will be allowed in the finished surface of the riprap, except that the extreme of such tolerance shall not be continuous over an area greater than 200 square feet. Riprap

shall be placed to its full course thickness at one operation and in such a manner as to avoid displacing the existing material. Placement shall begin at the lower elevations and proceed up the slope. The larger stones shall be well distributed and the entire mass of stones in their final position shall be roughly graded to conform to the gradation specified in paragraph RIPRAP. The finished riprap shall be free from objectionable pockets of small stones and clusters of larger stones. Placing riprap by dumping into chutes or by similar methods likely to cause segregation of the various sizes will not be permitted. Riprap can be placed subaqueously to three feet, without the permission of the Contracting Officer. Placing riprap by dumping it at the top of the slope and pushing it down the slope will not be permitted. The use of a grapple bucket will not be permitted. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during final placing, or by other methods of placement which will produce the specified results. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to obtain a reasonably well graded distribution of stone sizes as specified above. The Contractor shall maintain the riprap protection until accepted and any material displaced by any cause shall be replaced at its expense to the lines and grades shown on the drawings.

-END OF SECTION 32 22 70-

STANDARD TEST METHOD FOR GRADATION OF RIPRAP

- A. Select a representative sample (Note No. 1), weigh and dump on hard stand.
- B. Select specific sizes (see example) on which to run "individual weight larger than" test. (See Note No. 2). Procedure is similar to the standard aggregate gradation test for "individual weight retained."
- C. Determine the largest size stone in the sample. (100 percent size)
- D. Separate by "size larger than" the selected weights, starting with the larger sizes. Use reference stones, with identified weights, for visual comparison in separating the obviously "larger than" stones. Stones that appear close to the specific weight must be individually weighed to determine size grouping. Weigh each size group, either individually or cumulatively.
- E. Paragraph d above will result in "individual weight retained" figures. Calculate individual percent retained (heavier than), cumulative percent retained, and cumulative percent passing (lighter than). Plot percent passing, along with the specification curve on Eng Form 4055.

Notes

1. Sample Selection. The most important part of the test and least precise is the selection of a representative sample. No "standard" can be devised; larger quarry run stone is best sampled at the shot or muck pile by given direction to the loader; small graded riprap is best sampled by random selection from the transporting vehicles. If possible, all parties should take part in the sample selection, and agree before the sample is run, that the sample is representative.
2. Selection of Size for Separation. It is quite possible and accurate to run a gradation using any convenient sizes for the separation, without reference to the specifications. After the test is plotted on a curve, the gradation limits may be plotted. Overlapping gradation with this method are no problem. It is usually more convenient, however, to select points from the gradation limits, such as the minimum 50 percent size, the minimum 15 percent size, and one or two others, as separation points.

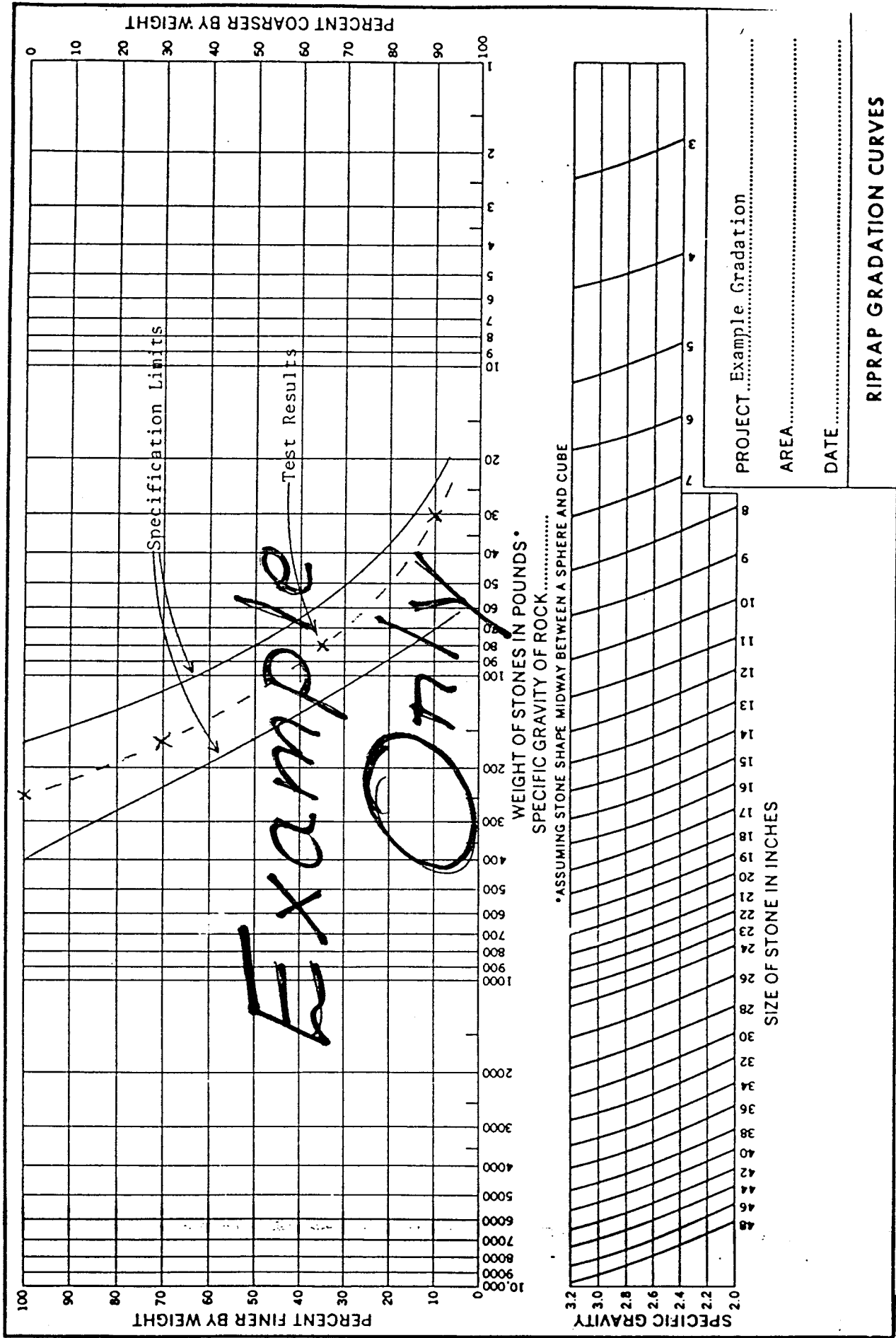
Example GradationSpecifications

<u>Stone Weight in Lbs</u>	<u>Percent Finer by Weight</u>
400-160	100
160-80	50
80-30	15

Example Worksheet

<u>Stone Size Lbs</u>	<u>Individual Wt. Retained</u>	<u>Individual Percent Retained</u>	<u>Cumulative Percent Retained</u>	<u>Cumulative Percent Passing</u>
400	0	0	-	100
160	9,600	30	30	70
80	11,200	35	65	35
30	8,000	25	90	10
30	<u>3,200</u>	10	100	-
	32,000 lbs			

NOTE:
Largest stone 251 lbs



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GRADATION TEST DATA SHEET

Sample No. : _____
 Type of Stone Tested _____
 Quarry _____
 Date of Test _____ Testing Rate _____ Tons
 Contractor _____ Location _____

TEST REPRESENTS

Contract No.	District	Tons
TOTAL		

GRADATION

Stone Size (lbs)	Weight Retained	Individual % Retained	Cumulative % Ret. % Pass	Specification % Finer by wt
Total Weight				

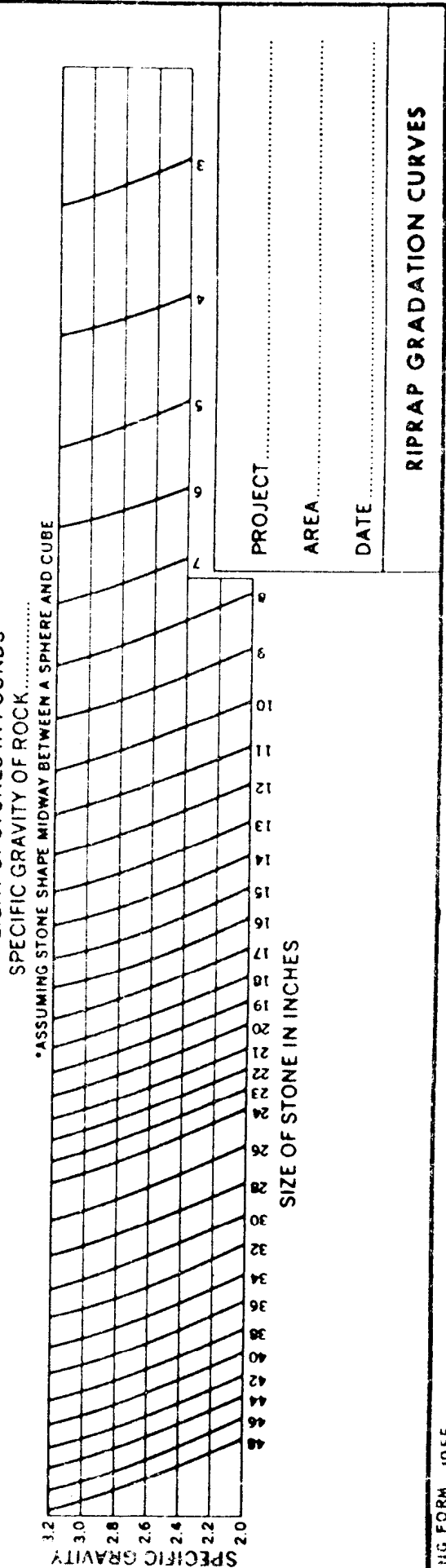
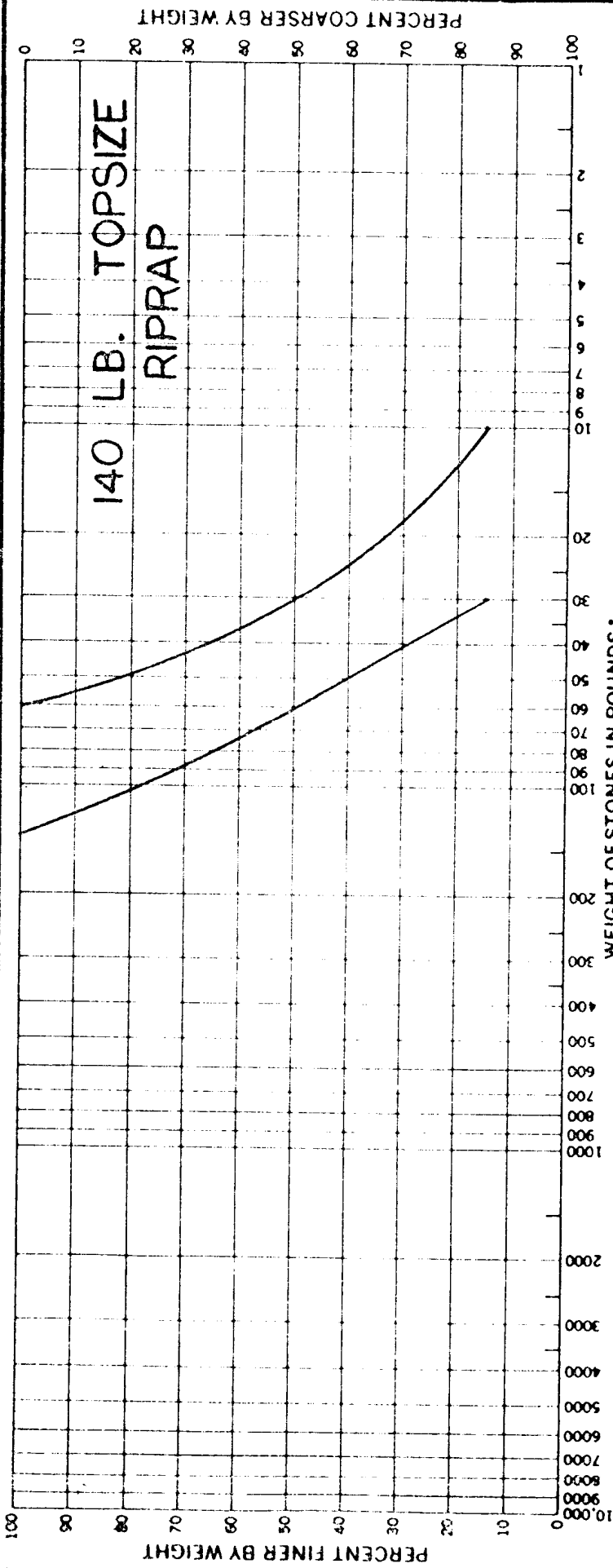
Remarks: _____

I certify that the above stone sample is representative of the total tonnage covered by this test report:

Contractor Representative _____

Government Representative _____

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PROJECT

AREA

DATE

RIPRAP GRADATION CURVES

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xxx

SECTION 32 95 00
ESTABLISHMENT OF TURF

PART 1 GENERAL

1.1 SCOPE. The work covered by this section of the specifications consists of furnishing all materials, equipment, plant and labor, and performing all work required for seeding, mulching, liming, and fertilizing in accordance with the requirements of this section of the specifications. Turf shall be established on all newly constructed areas. All other areas disturbed by the Contractor's operations shall be seeded or turfed at no additional cost to the Government.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control to assure compliance with the contract specifications and shall maintain records of quality control for all construction operations.

- (1) Dressing
- (2) Fertilizing
- (3) Liming
- (4) Mulching
- (5) Seeding
- (6) Sodding

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

1.3 COMMENCEMENT, PROSECUTION, AND COMPLETION. Seeding operations shall be performed between 15 March and 15 May or between 15 August and 30 September. All embankment which is completed prior to, or after expiration of the seeding seasons, shall be protected from eroding, as approved by the Contracting Officer, until the next seeding season occurs. Seed, fertilizer, limestone and mulch shall be applied as herein specified and in accordance with standard horticultural practices for establishing new turf.

1.3.1 Time Extension. When all work under this contract is completed except work required under this section, and such work is not performed because of seasonal limitations stated in paragraph 1.3 above, or because of conditions occurring within the specified seeding seasons which, in the opinion of the Contracting Officer, are unfavorable for such work, the time for completion will be extended by the number of days that this work is thereby delayed.

1.4 SAMPLING AND TESTING. Following completion of all earthwork, soil tests from the area to be seeded shall be performed by a recognized commercial testing laboratory to determine pH Level of soil and recommend application rates of nitrogen, phosphorous, potash and limestone. Testing shall be the responsibility of the Contractor and shall be accomplished at no additional cost to the Government. At least one soil sample and test shall be taken every two acres, and one composite report shall be made by the testing agency. The test results and application rates for nitrogen, phosphorous, potash and limestone indicated by the soil tests for preplanting fertilization shall be furnished to the Contracting Officer for review and approval prior to the Contractor ordering the soil nutrients.

1.5 SUBMITTALS. Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The Contractor shall submit the following to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES.

1.5.1 Reports. Soil Test Results; GA.

PART 2 PRODUCTS

2.1 MATERIALS.

2.1.1 Fertilizer. Fertilizer shall be uniform in composition and free-flowing. The fertilizer may be delivered to the site in bags or other convenient containers or delivered in bulk. If delivered in bags or containers, the fertilizer shall be fully labeled in accordance with the applicable fertilizer laws of the State and shall bear the name, tradename or trademark, and warranty of the producer. The fertilizer shall meet the requirements of the State for commercial fertilizer. Should the commercial fertilizer be furnished in bulk, the Contractor shall furnish certified weight tickets and a certified quantitative analysis report, in triplicate, from a recognized testing laboratory certifying the nutrient ratio of the materials. In the event the commercial mixture is delivered to the job site in the original containers, unopened, the analysis report will not be required. Quantity of fertilizer required per acre shall be determined by certified soil tests as specified in Paragraph SAMPLING AND TESTING.

2.1.2 Limestone. Limestone shall be approved agricultural grade limestone containing not less than 85 percent total carbonates. Limestone shall be ground to such fineness that 25 percent will pass a 100-mesh sieve and 100 percent will pass an 8-mesh sieve. Quantity of lime required per acre shall be determined by certified soil tests as specified in Paragraph SAMPLING AND TESTING.

2.1.3 Seed. Seed labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act, as reprinted with amendments August 1963, shall be furnished by the Contractor. Seed shall be fresh, new crop, furnished in sealed, standard containers unless written exception is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. The seed mixes, rates of application, minimum percent purity and germination, and maximum percent weed control shall be as shown in the following table:

<u>Kind of Seed</u>	<u>Pounds Per Acre</u>	<u>Minimum Purity</u>	<u>Minimum Germination</u>	<u>Maximum Weed Content</u>
Common Perennial Rye Grass				
Lolium perenne	50	98	85	0.8
Kentucky 31 Tall Fescue Festuca				
Arundinacea	50	98	85	0.8

2.1.4 Mulch. Threshed straw from a cereal grain such as oats, wheat, barley, or grass hay shall be provided. Materials that contain noxious grass or weed seeds will not be acceptable. Mulch shall be uniformly applied at the rate of 2 tons per acre.

2.1.5 Mulch Stabilizers. The Contractor shall embed or anchor the mulch into the soil by using an approved disk type roller having flat serrated disks spaced not more than 10 inches apart and equipped with cleaning scrapers.

2.1.6 Water. Water shall be free from oil, acid, alkali, salt, etc., and shall be from a source approved prior to use.

2.1.7 Sod. Sod used shall be consistent with the seed application specified in paragraph Seed above and placed in accordance with Part 7 of MSD Standard Construction Specifications.

PART 3 EXECUTION

3.1 ESTABLISHMENT. The Contractor shall assume responsibility for proper care of seeded areas while grass is becoming established for 3 months after completion of turfing, or returving if any, on the entire project, unless the desired cover is established in a shorter period of time and the Contracting Officer shortens the responsibility period.

3.1.1 Mowing. Turfed areas shall be kept mowed to a height between 4 and 8 inches above the turfed earth surface.

3.1.2 Refertilizing. The Contracting Officer will designate areas needing refertilization at least 15 days before reapplication is required. Fertilizer shall be distributed on designated areas during the period when grass is dry. Fertilizer shall be applied uniformly at the rate determined as specified in Paragraph SAMPLING AND TESTING. Fertilizer conforming to physical condition, packaging, and marking as specified hereinbefore shall be provided. All costs associated with refertilizing will be borne by the Contractor.

3.1.3 Reseeding. The Contracting Officer will designate areas requiring reseeding at least 15 days before the period specified for reseeding. Seed as specified shall be distributed at the rate specified in paragraph Seed of each ingredient per acre in a manner that will cause minimum disturbance to the existing stand of grass. All costs associated with reseeding will be borne by the Contractor.

3.2 REPAIR. When the surface to be turfed becomes gullied or otherwise damaged or when previously placed turfing is damaged, the affected area shall be repaired to re-establish the condition prior to injury, as directed. Repair work required because of faulty operations or negligence on the part of the Contractor shall be performed without additional cost to the Government.

3.3 INSPECTION AND ACCEPTANCE. Final acceptance will be made on completion of the contract. Acceptance of the established turf will be determined by visual inspection. Existence of erosion problems or dead and dying turf will not be acceptable.

-- END OF SECTION 32 95 00 --

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SECTION 33 27 15 - RELIEF WELLS

PART 1 GENERAL

1.1 SCOPE. This section, in conjunction with the contract drawings, covers new relief wells in their entirety including well drilling, well screen, riser pipe, filter pack, well development, and pumping tests and outlet works. All work shall conform to the requirements of the Missouri Water Well Construction Rules. Any permitting, licensing, and submittal requirements required by this Act are the responsibility of the Contractor.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall perform the inspection, sampling and testing, corrective actions, and submit the required reports to substantiate compliance with SECTION 01 14 40 - CONTRACTOR QUALITY CONTROL.

1.2.2 Inspection. The Contractor's quality control organization shall be responsible to observe and control, for compliance with the technical specifications, all relief well construction and repair including but not limited to the following: maintain Government survey layout, materials, drilling method, joints, bottom plug, materials storage, well pipe assembly and installation, backfilling, cleaning, development, pumps, pump testing, earthwork, discharge channels and safety. Completed relief wells shall be protected against damage and contamination.

1.2.3 Sampling and Testing. The Contractor's quality control organization shall verify that all relief well materials conform to these specifications before delivery to the project.

1.2.4 Action Required. When quality control monitoring or testing detects non-conformance with specifications, corrective action shall be directed. The details of the irregularities and the actions directed to correct them shall be reported immediately to the representative of the Contracting Officer and included in the daily Quality Control report. Corrective action shall include steps taken to assure against recurrence of the irregularity.

1.2.5 Reports. Reports shall include, for each new relief well, ENG form 1836 "Drilling Log", WES Form 797 "Relief Well Installation Report", WES Form 796 "Relief Well Pumping Test Report", and ENG Form 2087 "Gradation Curves" for filter pack samples. A copy of each report form is attached at the end of these specifications. The driller shall complete a detailed log for each new well. The report on relief well backfill material shall include the filter pack particle size distribution. Data concerning installation and development of the relief wells shall be included in the report on relief well installation. A "Relief Well Pumping Test Report" shall include those items listed in paragraph Data for each new relief well. Results of relief well

repair work shall be submitted on a daily basis as work progresses. The reports shall be completely filled out and shall be submitted to the Contracting Officer as part of the daily quality control report specified in SECTION 01 14 40 - CONTRACTOR QUALITY CONTROL.

1.3 APPLICABLE PUBLICATIONS. All publications referenced shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The following publications listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1.3.1 Department of the Army, Corps of Engineers, Engineer Manuals.

EM 1110-2-1906 Laboratory Soils Testing,
30 November 1970.

1.3.2 American Society For Testing and Materials (ASTM).

A 312/A312M (REV B)	Seamless and Welded Austenitic Stainless Steel Pipes
ASTM B 98	Copper-Silicon Alloy Rod, Bar, and Shapes
C 117	Materials Finer Than 75-UM (No. 200) Sieve in Mineral Aggregates By Washing
C 136	Sieve Analysis of Fine and Coarse Aggregates (Rev A)
D 422	Particle-Size Analysis of Soils
D 698	Laboratory Compaction Characteristics of Soil Using Standard Effort
D 1556	Density and Unit Weight of Soil in Place by the Sand-Cone Method
D 2167	Density of Soil in Place by the Drive Cylinder Method
D 2487	Classification of Soils for Engineering Purposes
D 4253	Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
D 4254	Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
F 480	Thermoplastic Well Casing Pipe and

Couplings Made in Standard Dimension Ratios (SDR), Sch 40 and Sch 80

1.3.3 The Aluminum Association (AA).

AA SAS-30 Aluminum Construction Manual Series
-Section 1 Specifications for Aluminum Structures

1.3.4 American Welding Society (AWS).

D 1.1 Structural Welding Code - Steel

1.3.5 Missouri Department of Natural Resources, Division of Geology and Land Survey.

Missouri Well Construction Rules, Miscellaneous Publication No. #50.

1.3.6 Missouri Standard Specifications (MoDOT)

Missouri Standard Specifications for Highway Construction, dated 2011, by the Missouri Highway and Transportation Commission (MoDOT). The term "Engineer" as used therein shall be interpreted to mean "Contracting Officer."

1.3.7 Well Drilling Industry Publications.

Ground Water and Wells, 2nd Ed., Johnson Filtration System, Inc.

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 01 13 00 - SUBMITTAL PROCEDURES.

1.4.1 Shop Drawings. GA. The Contractor shall submit to the Contracting Officer, shop drawings which present details of the proposed methods for drilling, coupling well screen and riser sections, installing well screen and riser, backfilling, developing, and pump testing. The shop drawings shall show the well screen material, dimensions, slot size, shape, pattern, bottom, and installation details. The riser pipe and well housing details shall also be shown on the shop drawings. The shop drawing submittal shall include a Schedule of Materials describing the length of each section of well screen and riser pipe used to meet the total lengths specified for each well. Any Contractor-proposed substitutes or alternates in material construction details or methods shall be indicated on the submittal and detailed on the shop drawings. No phase of the work shall be initiated until all shop drawings concerning that activity have been approved.

1.4.2 Well Drilling Specialist. GA. The Contractor shall submit to the Contracting Officer, for review and approval within 10 days of Notice to Proceed, summaries of qualifications and references for the Well Drilling

Specialist. Well drilling shall not proceed until the well drilling specialist has been approved by the Government.

1.5 LOCATION. Relief well locations shall be field located by the contractor using the table in DWG B-301 and must be field verified by Contracting Officers' representative before any drilling can begin. The final relief well locations may be adjusted by the Contracting Officer at no additional cost to the Government.

1.6 DISPOSAL OF DEBRIS. The Contractor shall dispose of all debris resulting from relief well construction operations off-site. Disposal activities shall be in compliance with SECTION 01 11 30 - ENVIRONMENTAL PROTECTION.

1.7 SUBSURFACE DATA. Subsurface soil boring logs are shown on the drawings. These data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations. Groundwater levels indicated in the soil boring logs were at the time of exploration. The groundwater table may vary significantly depending on time of year and river stage level.

PART 2 PRODUCTS

2.1 WELL SCREEN AND RISER PIPE.

2.1.1 General. Well screen, screen interval and riser length will be determined by the table on DWG B-301. Materials for relief wells shall be of the type specified below, and shall be of the dimensions specified by the Government. Screen openings shall be uniform in size and pattern, and shall be spaced approximately equally around the circumference of the pipe. Before installation, all well-screen shall be approved by the Contracting Officer.

2.1.2 Stainless Steel Well Screen.

2.1.2.1 General. The well screen shall be of the continuous slot, wire-wound design. It shall be fabricated by circumferentially wrapping a triangularly shaped wire around a circular array of internal rods. The wire configuration shall produce inlet slots with sharp outer edges, widening inwardly to minimize clogging. Each juncture between the horizontal wire and the vertical rods shall be fusion welded under water by the electrical resistance method. End fittings shall be welded to the screen body.

2.1.2.2 Materials. All pipes, rods, bars, wire, and fittings shall be stainless steel conforming to ASTM A 312, Grade TP-304.

2.1.2.3 Well Screen. Each screen length identified will refer to the actual length of exposed open area. Collapse, column, and tensile strengths of the well screens shall be adequate to allow safe installation and development of the wells. In addition, each well shall contain 2 five-foot

sections of screen to allow for field changes during installation, if necessary.

2.1.2.4 Well Screen Coupling. End fittings for the stainless steel well screens shall be furnished with Schedule 40 flush threads compatible with ASTM F 480 requirements, and of the same alloy as the well screen and riser pipe. Flush joint fittings which join well screen to riser pipe shall adequately provide for the transition from well screen to riser pipe. Joints shall be designed and constructed to support the weight of the screen and/or pipe as it is lowered into the hole. All fittings shall contain a Viton O-ring on the male end.

2.1.3 Stainless Steel Riser Pipe. The new relief well riser pipe and fittings shall be manufactured from stainless steel conforming to ASTM A 312, Grade TP-304. The pipe roundness, wall thickness, and straightness shall meet the ASTM specifications. The riser pipe shall be Schedule 40 wall thickness with a minimum inside diameter of 8 inches. Riser discharge shall conform to the details shown on the contract drawings. Couplings for new relief wells between the riser pipe and the well screen and between adjacent pieces of riser pipe sections shall be as specified for well screen pipes

2.1.4 Bottom Plug for Well Screen. The bottom plug for each well screen shall be made of the same material and at least the same minimum thickness as the screen. Plugs shall be the same diameter as the outside of the screen and fastened to the bottom screen portion in an approved manner.

2.2 FILTER PACK MATERIALS.

2.2.1 General. Material for the filter pack around the riser pipes and screens shall be a washed sand composed of hard, noncarbonate, tough, and durable particles free from adherent coating. The filter pack material shall contain no detrimental quantities of organic matter or soft, friable, thin, or elongated particles. Filter pack materials shall be uniformly graded, with a coefficient of uniformity less than 2.0.

2.2.1.1 Filter varies per well as indicated on DWG B-301 and below:

FOR MIP #2

U.S. Standard Sieve No.	Percent by Weight Passing
No. 6	100
No. 7	100
No. 8	86-100
No. 10	34-50
No. 12	0-10
No. 14	0-7
No. 16	0-3
No. 18	0

FOR MIP COARSE 80

U.S. Standard Sieve No.	Percent by Weight Passing
No. 10	100
No. 12	73-93
No. 14	52-72
No. 16	31-47
No. 18	4-20
No. 20	0-4
No. 30	0-3
No. 50	0

FOR MIP 60-80

U.S. Standard Sieve No.	Percent by Weight Passing
No. 10	100
No. 12	83-99
No. 14	71-88
No. 16	53-73
No. 18	34-54
No. 20	20-37
No. 30	0-2

2.2.2 Particle Size Distribution.

2.2.2.1 The particle size distribution of the filter pack shall be sampled and tested by the Contractor using the U. S. Standard Sieve nomenclature described in 33 27 15 2.2.1. There shall be one particle size

distribution test for the filter pack material used in each well. No later than 48 hours before being placed in the relief well, the particle size distribution of the filter pack shall be determined from a sample obtained from the material stockpiled and the results supplied to the Contracting Officer. The filter pack material and its gradation shall be approved by the Contracting Officer before it is placed in the well. The filter pack size for each relief well is located in DWG B-301.

2.2.2.2 The laboratory test procedure shall conform to that presented in ASTM C 136. All points on individual grading curves obtained from representative samples of filter material shall lie between the boundary limits as defined by smooth curves drawn through the tabulated grading limits plotted on a mechanical analysis diagram. The individual grading curves within these limits shall not exhibit abrupt changes in slope denoting skip grading, scalping of certain sizes, or other irregularities, which would be detrimental to the proper functioning of the filter.

2.3 RELIEF WELL OUTLET WORKS. The outlet works shall conform to the requirements specified in SECTION 33 27 20 - RELIEF WELL COLLECTOR SYSTEM.

2.3.1 Check valve. The check valves shall be fabricated in accordance with details shown on the drawings and as specified herein. The aluminum parts, at the Contractor's option, may be any one or a combination of aluminum alloys 3005-H14, 6061-T-4, or T6. The 3/8-inch diameter aluminum guide rods shall be carefully bent to avoid flattening at the bends. The seat for the check valve shall be constructed of two 1/4-inch aluminum plates and a neoprene gasket, all bolted together as indicated on the drawings. The bolt holes shall be formed by drilling or punching the aluminum plates and neoprene gasket. The neoprene gasket shall have a thickness of 1/2-inch and shall be fabricated from solid neoprene gasket material. The aluminum guide rods and aluminum lifting ring shall be connected to the plates by welding conforming to the applicable provisions of the AA Specification SAS-30.

2.4 CRUSHED STONE MATERIAL. Crushed stone material shall conform to the requirements specified in SECTION 31 22 70 - STONE PROTECTION, Paragraph Crushed Stone Bedding.

2.5 BRONZE SURVEY MARKERS. The bronze survey markers shall be provided by the government. The Contractor shall add markings to indicate each individual relief well number and elevation of marker. Relief well numbering is located in DWG B-301.

PART 3 EXECUTION

3.1 DRILLING.

3.1.1 General. The Contractor shall designate a well drilling specialist for each work shift. The well drilling specialist shall have a minimum of five years experience in the water well industry, and shall be familiar with the operation of all equipment and machinery required to install high-capacity water wells in Mississippi River alluvium. The Contractor shall submit summaries of qualifications and references for any and all well drilling specialists to the Government for review and approval within 10 days of Notice to Proceed. Well drilling shall not proceed until the well drilling specialist has been approved by the Government. The well drilling specialist shall be at the field site at all times during drilling, installation of well materials, or development of installed wells. Wells shall be drilled by the reverse rotary method, in such a manner to ensure proper placement of the well screen, riser pipe and filter pack. Drilling and installation of well screen and filter pack shall be completed for each well without interruption. Drill cutting material shall be disposed of as specified in paragraph DISPOSAL OF DEBRIS. All other excavated material shall be disposed of according to SECTION 01 11 30 - ENVIRONMENTAL PROTECTION. Before the drilling operation begins on each well, the Contractor shall demonstrate that all material, equipment, and experienced personnel are mobilized and that all equipment necessary for the job is adequate for an efficient operation and is operating in a satisfactory manner. Loss of a hole or well because of lack of material, inadequate or faulty equipment, or careless operating procedures will be considered cause for an abandoned well due to fault of the Contractor. The digging of mud pits or similar excavations will not be allowed.

3.1.2 Reverse Rotary Method. The diameter of the hole shall be such that will permit the placement of the thickness of filter pack as shown on the sketches. The use of a bentonite drilling fluid is prohibited. If the walls of the hole above the top of the filter pack require support during development operations, a temporary casing similar to that specified in paragraph Temporary Casing shall be placed so as to extend from the ground surface to at least one foot below the top of the filter material. The Contractor shall be responsible for establishing and maintaining a minimum 7-foot head differential.

3.1.3 Temporary Casing. A new or used temporary well casing of either iron or steel may be used to support the sides of the entire hole during drilling and placement of screen, riser pipe, and filter pack and to support the sides of the unbackfilled portion of the hole during development of the well. Any temporary casing shall have an inside diameter large enough to provide the minimum filter thickness, as specified in paragraph PLACING FILTER PACK, entirely around the well screen or riser pipe and shall have sufficient thickness to retain its shape and maintain a true section throughout its depth and may be in sections of any convenient length. The temporary casing shall be securely anchored to the drill rig or ground surface at all times until removed. The temporary casing shall be such as to permit its removal without

interfering with the filter or riser pipe. Methods of installation, which will create a cavity outside the temporary casing, will not be permitted.

3.1.4 Obstructions Encountered. If obstructions are encountered in the foundation which, in the opinion of the Contracting Officer, renders it impracticable to complete the well to the directed depth, the Contracting Officer may adjust the depth to conform to that of the obstruction. Alternatively, the Contracting Officer may direct the Contractor to abandon the well as specified in paragraph RELIEF WELL ABANDONMENT and construct another well at an adjacent site. The Contractor shall provide and use drills and equipment that are capable of drilling through in-situ wood deposits within the alluvium and capable of removing cobbles up to 5-1/2 inches in diameter. The presence of cobbles up to 5-1/2 inches in diameter or in-situ wood which may be encountered during drilling, shall not be considered as obstructions or sufficient reason for abandonment of a well. Where obstructions are encountered, drilling shall be continued until it is demonstrated to the Contracting Officer that further efforts to advance the drill hole are impracticable. Such demonstration shall include, but not be limited to, continuing drilling operations when no gain in depth is being made for a minimum of 30 minutes.

3.1.5 Temporary Drilling Pads. The Contractor shall construct any required drilling pads to the minimum dimensions, not to exceed 200 ton for the project, needed to perform the work in a safe manner. Material used in the construction of the pads shall consist of crushed stone meeting the requirements of SECTION 32 22 70, paragraph CRUSHED STONE BEDDING, and further, meeting the gradation requirements for MoDOT Type 2 aggregate.

3.1.5.1 CRUSHED STONE AGGREGATE. Crushed stone aggregate shall conform to all the requirements stated in the Missouri Department of Transportation (MoDOT), Type 2 for coarse aggregate and SECTION 32 22 70, paragraph CRUSHED STONE BEDDING.

3.2 INSTALLATION OF RISER PIPE AND SCREEN.

3.2.1 Assembly. All riser pipe and screen shall be in new and good condition before installation and all couplings and other accessory parts shall be securely fastened in place. The successive lengths of pipe shall be arranged to provide accurate placement of the screen sections in the soil strata. The bottom of the screen and riser assembly shall be equipped with an appropriate centering guide which will satisfactorily center the riser pipe and screen in the well and will hold it securely in position while the filter pack material is being placed.

3.2.2 Joints. Sections of relief well pipe shall be joined together as specified in paragraph Well Screen Coupling. Joints shall be designed and constructed to have sufficient strength to support the weight of the relief well string as it is lowered into the hole.

3.2.3. Installation. The assembled riser pipe and screen shall be

placed in the hole in such manner as to avoid jarring impacts and to ensure that the assembly is centered and not damaged or disconnected. After the screen and riser pipe have been placed, a filter pack shall be constructed around the screen section as specified in paragraph PLACING FILTER PACK and the well developed as specified in paragraph DEVELOPMENT. The top of the riser pipe shall be held at the designated elevation during placement of the filter pack. The top of the riser pipe shall stick up 6 inches above the bottom of the manhole when the well is completed.

3.2.4 Plumbness and Alignment.

3.2.4.1 Alignment. Each well shall be installed and maintained straight and plumb during placement of filter and development. Immediately before placing the filter pack and with the top of the well fastened securely in a vertical and horizontal position, the Contracting Officer may elect to perform an alignment test. This test, if performed, will be performed by Government personnel with Government-owned equipment and will consist of two 10-foot sections of standard 8-inch pipe coupled together lowered inside the well for the full depth of the well and withdrawn without binding against the sides of the well screen or riser pipe. If the well fails to conform to the standard described above, the alignment of the well shall be corrected by the Contractor at no additional expense to the Government.

3.2.4.2 Plumbness Test. After completion of the alignment test, if performed, the Contracting Officer may elect to perform a plumbness test before placement of the filter pack. This test, if performed, will be performed by Government personnel with Government-owned equipment and will consist of a plumb-line run from the top of the well to the bottom of the well. A variation of 12 inches per 100 feet will be permitted in the combined length of screen and riser pipe of the well. If the well fails to conform to the standard described above, the plumbness of the well shall be corrected by the Contractor at no additional expense to the Government.

3.3 PLACING FILTER PACK.

3.3.1 General. After the screen and riser pipe have been placed, and alignment surveys and plumbness surveys (if performed by the Government) are conducted, the check valve shall be placed on the top of the well riser to prevent any material from entering the interior of the well. The Contractor shall place the filter pack using the tremie method or an approved alternative which prevents segregation. The filter pack shall be disinfected during placement by the addition of 70% hypochlorite to the pack in the proportion of 2 lbs. per ton.

3.3.2 Tremie.

3.3.2.1 Tremie Hopper. The filter pack shall be placed in a tremie hopper so constructed and balanced that filter material will feed freely and equally to two tremie pipes located at 180 degrees on each side of the screen. Connections between the tremie pipe and the hopper shall be designed for quick

connection or disconnection for adding or removing tremie pipe with least possible delay.

3.3.2.2 Tremie Pipes. Tremie pipe shall consist of two rigid 4-inch inside diameter tremies with no obstructions. The tremie pipes shall consist of equal 5-foot lengths of standard 4-inch pipe with 1/16-inch wide equally spaced slotted openings. Tremie pipe shall be free of dents, flat spots, damaged threads, and holes, and shall be reamed and/or deburred to full inside diameter of the pipe. The tremie guide shall consist of a metal ring or rings of sufficient diameter to slip freely over riser pipe and screen with 4-inch collars welded to the guide at 180 degrees to securely hold the tremie pipe in place.

3.3.3 Procedure.

3.3.3.1 The Contractor shall be equipped to quickly and efficiently add filter material to the hopper in any position from the ground surface to the maximum height of the hopper. No filter pack material shall be allowed to enter the well except through the tremie pipes. At no time shall tremie guide or pipes be raised, lowered or supported by only one pipe. Ten feet of tremie pipe shall be installed below the lower tremie guide. The filter pack material shall be placed using clean water introduced at bottom of hopper and without significant segregation.

3.3.3.2 The filter pack shall have a thickness of 8 inches between the outside of the well screen and the outside of the filter pack and shall be placed to a level 5 feet above the top of the well screen. At the commencement of the placing operation, the tremie shall rest at the bottom of the hole and shall be filled with filter pack material. The tremie shall then be raised in increments approximately equal to the increments of the filter pack placed. At all times during the placing of the filter pack, the tremie shall be kept filled to within five feet of its top.

3.3.3.3 If temporary casing is used, the filter pack shall be placed in increments not to exceed 2 feet; the tremie and temporary casing shall be raised in small increments approximately equal to the increments of the filter pack placed, except that at no time prior to the completion of placement of the filter pack shall the bottom of the casing be less than 1-foot below the top of the filter pack in the hole. The Contractor shall provide a means of measuring the filter pack depth in the hole. The alternate placing of filter pack material and withdrawing of the tremie and temporary casing shall be continued until the filter pack has been placed to the level shown on the drawings.

3.3.3.4 During development of the well, the top of the filter pack material shall be maintained at the level specified in paragraph 3.3.3.2. Prior to and during placement of the filter pack, the top of the temporary casing or hole shall be covered or otherwise shielded to prevent the filter pack from entering the space around the well except through the tremie pipe. Material, which may have entered the well screen and riser pipe, shall be

removed before development of the well is commenced. Construction of the relief well outlets works specified in paragraph 2.3 or of the backfilling specified in paragraph 3.5 shall not commence until the development of the well is completed and the filter pack has been placed to the elevation specified.

3.4 DEVELOPMENT.

3.4.1 General. Following placement of filter pack materials the Contractor shall develop the relief well by high velocity jetting and simultaneous airlift pumping. At the time of development, the well shall be free of drawdown or surging effects due to pump testing, developing or drilling at another location. The Contractor shall be responsible for maintaining the needed access and work areas at the relief well and the necessary clearance in the relief well to accomplish development. The Contractor shall furnish, install or construct the necessary discharge line and troughs to conduct and dispose of the discharge a sufficient distance from the work areas to prevent damage and contamination of any relief wells. This may require running the discharge lines over the levee and discharging on and splash protection at the toe of the levee on the riverside. Development shall be conducted to achieve a stable well of maximum efficiency and shall be continued until little or no material from the foundation or filter pack can be pulled into the well by pumping. As development proceeds, filter pack material shall be added to the annular space around the screen to maintain the top elevation of the filter pack at the specified elevation. The Contractor shall provide a bubbler tube or other approved means for accurately determining the water level in the well under all conditions. If at any time during the development process it becomes apparent, in the opinion of the Contracting Officer, that the well may be damaged, operations shall be immediately stopped. The Contracting Officer may require a change in method if the Contractor's method does not accomplish the desired results. If after initial development and 6 hours of additional development, a well continues to produce excess sand, the Contracting Officer may order the Contractor to abandon the well as specified in paragraph RELIEF WELL ABANDONMENT. All materials pulled into the well by the development process shall be removed prior to performing the pumping test.

3.4.2.2 Jetting and Air-Lift Pumping. The well development shall be accomplished by high-velocity, horizontal jetting and simultaneous airlift pumping. The outside diameter of the jetting tool shall be ½ to 1 inch less than the inside diameter of the screen. The exit velocity of the jetting fluid shall be between 150 and 300 fps and have a pressure at the nozzle of approximately 200 psi. Circulation of the jetting water will not be allowed. The jetting shall proceed from the bottom of the screen to the top. The tool shall be rotated at a speed of 1 rpm. It shall be positioned at one level for not less than 2 minutes and shall then be raised to the next level. Individual jetting levels shall be spaced no more than 6 inches vertically apart. Sizing of the eductor pipe, air line, and air compressor shall be adequate to efficiently pump the well at a rate from 10 to 20 percent more than the volume of water introduced through the jetting tool. The eductor pipe shall be placed no more than 5 feet above the top of the jetting tool during development. At the start of the airline pumping the quantity of air injected shall only be sufficient to initiate flow through the screen.

3.5 PUMPING TEST.

3.5.1 General. The Contractor shall perform pumping tests to determine whether the new wells have been adequately developed. Development shall continue until the sand content of the discharge, per well, averages no more than 5 milligrams of sand per Liter of discharge water (5 mg/L) for a complete pumping cycle of 2 hours duration when pumping at a constant rate of 500 gpm. Sand content measurements shall be taken at equal 15-minute intervals to permit plotting sand content as a function of time and discharge and determination of average content for each cycle. After completion of the test, the depth of the well shall be measured, by means of an approved method, under the direction of a representative of the Contracting Officer.

3.5.2 Equipment.

3.5.2.1 Pump. The Contractor shall provide a deep-well submersible pump capable of producing the specified discharge over a period sufficient to satisfactorily perform the pumping test specified. The Contractor shall provide, without additional cost to the Government, the electrical power, control box and the necessary wiring which shall be removed at the completion of the pumping test.

3.5.2.2 Water Level. The Contractor shall provide means for accurately determining the water level in the well to within 0.01 foot, under all conditions.

3.5.2.3 Flow Meter. The Contractor shall furnish and install a calibrated flow meter of standard design for measuring the discharge from the well during the pumping test. The calibration of the flow meter shall be checked at regular intervals.

3.5.2.4 Rossum Sand Sampler. The Contractor shall furnish an approved Rossum centrifugal sand sampler and appurtenant piping and valving for accurate determination of the discharge sand content.

3.5.3 Data. The following test data shall be obtained and recorded by the Contractor on WES Form 796 "Relief Well Pumping Test Report", a copy of which is attached at the end of this section.

(1) Time of water level measurement.

(2) Depth of water in well before, during, and after pumping. The time intervals for measuring the water levels shall be every 15 minutes for the duration of the pumping test.

(3) Flow in gpm.

(4) Elevation of water in well before and after pumping.

(5) Elevation of water in closest adjacent well or piezometer before and during pumping, when requested by the Contracting Officer.

(6) The depth of sand in well before, during, and after pumping.

(7) Sand content of discharge in mg/L plotted against time of pumping.

3.5.4 Procedure.

3.5.4.1 The pumping and sand infiltration tests shall be conducted under the direction of the Contracting Officer. The Contractor shall test each well by pumping continuously for a minimum of two hours. The pumping shall be at a constant rate sufficient to produce a discharge of 500 gpm or 10 feet of drawdown, whichever is less. No test pumping of a well will be permitted concurrently with drilling or pumping of any other well within a radius of 500 feet. In the event that the test is interrupted, other than by order of the Contracting Officer, prior to the completion of the specified period of continuous operations, the water level in the well shall be allowed to recover to the original static level and the test shall be re-run at no additional expense to the Government.

3.5.4.2 In addition to the test described above, the Contracting Officer may direct the Contractor to perform additional testing. Such additional testing shall conform in general to the requirements specified above with the exception that the duration of the tests and the approximate drawdown will be determined by the Contracting Officer. The test, to be successful, shall be continuous throughout the specified period.

3.5.4.3 In the event that sand or other material infiltrates into the well as a result of the pumping test, the following procedure shall be followed: If the rate of sand infiltration during the latter part of the two

hour pumping test has not been reduced to 5 mg/L or less, the well shall be resurged by manipulation of the test pump for 20 minutes after which the test pumping shall be resumed and shall be continued at the constant rate specified above until the sand infiltration rate is reduced to 5 mg/L, but not for more than a total of eight hours.

3.5.4.4 If, at the end of eight hours of pumping, the rate of infiltration of sand is more than 5 mg/L, the well shall be abandoned, except that the Contractor may elect to continue the test pumping and perform such other approved remedial work considered desirable, all at the Contractor's own expense. If, after such additional test pumping and other remedial measures, the sand infiltration rate of a well is reduced to 5 mg/L, the well will be accepted. Unacceptable wells shall be abandoned in accordance with paragraph RELIEF WELL ABANDONMENT and a new well installed nearby at a location directed by the Contracting Officer.

3.5.4.5 Upon completion of the pumping test, any sand or filter material in the bottom of the well shall be removed by pumping or by other approved methods, after which the Contractor shall remove all equipment, discharge lines, etc., and restore the site to its original condition.

3.5.5 Additional Pumping Test Measurements. In addition to the measurements and record-keeping required of the Contractor, the Government or its representative may require access to the well to perform additional water level measurements in the pumped well and nearby relief wells.

3.5.6 Records. The Contractor shall obtain and furnish to the representative of the Contracting Officer for record purposes the elevation of the water in each well before and after the development pumping, the flow in gpm at the completion of the pumping and the time of observation. The water surface elevation shall be obtained immediately before starting the surge pump and the water surface elevation and flow shall be obtained just before stopping the pump upon completion of the development pumping. This data shall be recorded on WES Form 797, a copy of which is attached at the end of this section.

3.6 WELL SEALING. After each new well has been developed the annular space above the filter pack shall be backfilled by extending the filter pack a minimum of 12 inches above the top of the screen and sealing the remainder of the space up to the base of the pre-cast manhole elevation with concrete. Concrete shall conform to the requirements specified in SECTION 03 33 00 - CAST-IN-PLACE CONCRETE. The temporary casing, if used, shall be withdrawn in increments as the backfill is placed.

3.7 RELIEF WELL ABANDONMENT. Wells ordered abandoned by the Contracting Officer, shall be sealed to the ground surface with concrete by means of a tremie pipe inserted to the bottom of the well. The tremie pipe may be withdrawn but the end of the grout pipe must remain at least 2 feet below the surface of the concrete. The concrete shall be placed through the pipe and forced upwards towards the surface. When the concrete reaches the surface, it

shall be allowed to flow to waste until the Contracting Officer determines that the sealing has been satisfactorily accomplished. The concrete mix shall consist of that specified in SECTION 03 33 00 - CAST-IN-PLACE CONCRETE.

-END OF SECTION-

RELIEF WELL INSTALLATION REPORT

PROJECT:				LEVEE DISTRICT:						
LOCATION (STA):			OFFSET FROM CENTER LINE:			WELL NO.:				
DRILLING METHOD:			DATE AND TIME: - FROM: TO:							
WELL SCREEN: - TYPE:				INSIDE DIAM:		PERFORATIONS:				
RISER: - TYPE			INSIDE DIAM:		FILTER:					
TYPE OF WELL GUARD			INSIDE DIAM:		TYPE OF BACKFILL:					
CONTRACTOR:			CONTRACT NO.:			FORMAN: OPERATOR:				
GROUND ELEV AT WELL:			DEPTH Fine TO: Sand:			Medium to Fine Sand:				
ELEV TOP OF RISER:		ELEV TOP OF WELL GUARD:			ELEV TOP OF CONCRETE BACKFILL:					
TYPE OF CHECK VALVE:		WELL EXTENSION: - TYPE: HI:				LOG OF HOLE	DEPTH	PIPE INSTALLED		
FINAL WELL INSTALLATION DATA										
RISER PIPE LENGTH:			INSIDE DEPTH OF WELL:				-0-			
"EXTRA" SCREEN LENGTH:			DEPTH OF SAND IN WELL AFTER CLEANING:						-10-	
"DESIGN" SCREEN LENGTH:			ELEV TOP OF WELL SCREEN:							
TOTAL SCREEN LENGTH:			ELEV TOP OF OF FILTER:						-20-	
"BLANK" PIPE LENGTH:			INSIDE BOTTOM ELEV OF WELL:							
DEPTH OF HOLE:			ELEV RISER SET AT:						-30-	
SURGING DATA										
METHOD:		DATE AND TIME:		TOTAL SURGING TIME:				-40-		
GRAVEL IN WELL BEFORE SURGING:		MATERIAL SURGED IN:	SURGING CYCLE	#1:	#2:	#3:				
SURGING CYCLE	#4:	#5:	#6:	#7:	#8:	TOTAL:				
SETTLEMENT OF FILTER DURING SURGING:								-50-		
PUMPING DATA										
RATE OF PUMPING:				TOTAL PUMPING TIME:						-60-
RATE OF SAND INFILTRATION: - START: End:				REMARKS:						
								-70-		
								-80-		
								-90-		
								-100-		

WES FORM 797

MAR '53

REVISED OCT. '53

INSPECTOR

RELIEF WELL PUMPING TEST REPORT

PROJECT:					LEVEE					
LOCATION (STA):					ELEV TOP OF RISER:			WELL NO:		
DATE:			TIME TEST STARTED:			TIME TEST COMPLETED:				
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER	DRAWDOWN IN FEET	FLOW IN GPM	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER	DRAWDOWN IN FEET	FLOW IN GPM	

SAND INFILTRATION TEST

DEPTH OF WELL:			DEPTH TO SAND IN WELL BEFORE TEST:			SAND IN WELL BEFORE TEST:		
----------------	--	--	------------------------------------	--	--	---------------------------	--	--

TEST NO.	TIME	DEPTH TO SAND (FT)	SAND IN WELL (PTS)	GAIN OR LOST OF SAND IN WELL (PTS)	SAND PUMPED OUT OF WELL (PTS)	TOTAL INFLOW OF SAND INTO WELL (PTS)	LENGTH OF TEST (MIN)	RATE OF SAND INFILTRATION (PTS. HR)

DEPTH TO SAND IN WELL AFTER TEST:			SAND IN WELL AFTER TEST:			SAND IN WELL AFTER CLEANING:		
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REMARKS:

 INSPECTOR

Sand Infiltration Test

PROJECT: _____
JOB LOCATION: _____
JOB #: _____
CLIENT: _____

WELL #: _____
WELL DEPTH (ft): _____
OPERATOR: _____
INSPECTOR: _____
DATE: _____

PUMP TEST START TIME: _____

TEST #	TIME (min) (start/stop)	FLOWMETER READING (FLOW) (start/stop)	PUMPING RATE (gpm)	LENGTH OF TEST (min)	OUTLET VALVE FLOW (GPM)*	ROSSUM READING ml	SANDING RATE ml / min	CONVERSION FACTOR RATE * 528	SANDING RATE (ppm)
1									

* Outlet valve should be calibrated to 0.5 GPM
 Maximum Allowable sanding rate is 1pt / 25000 gal ~ 5ppm (parts per million)

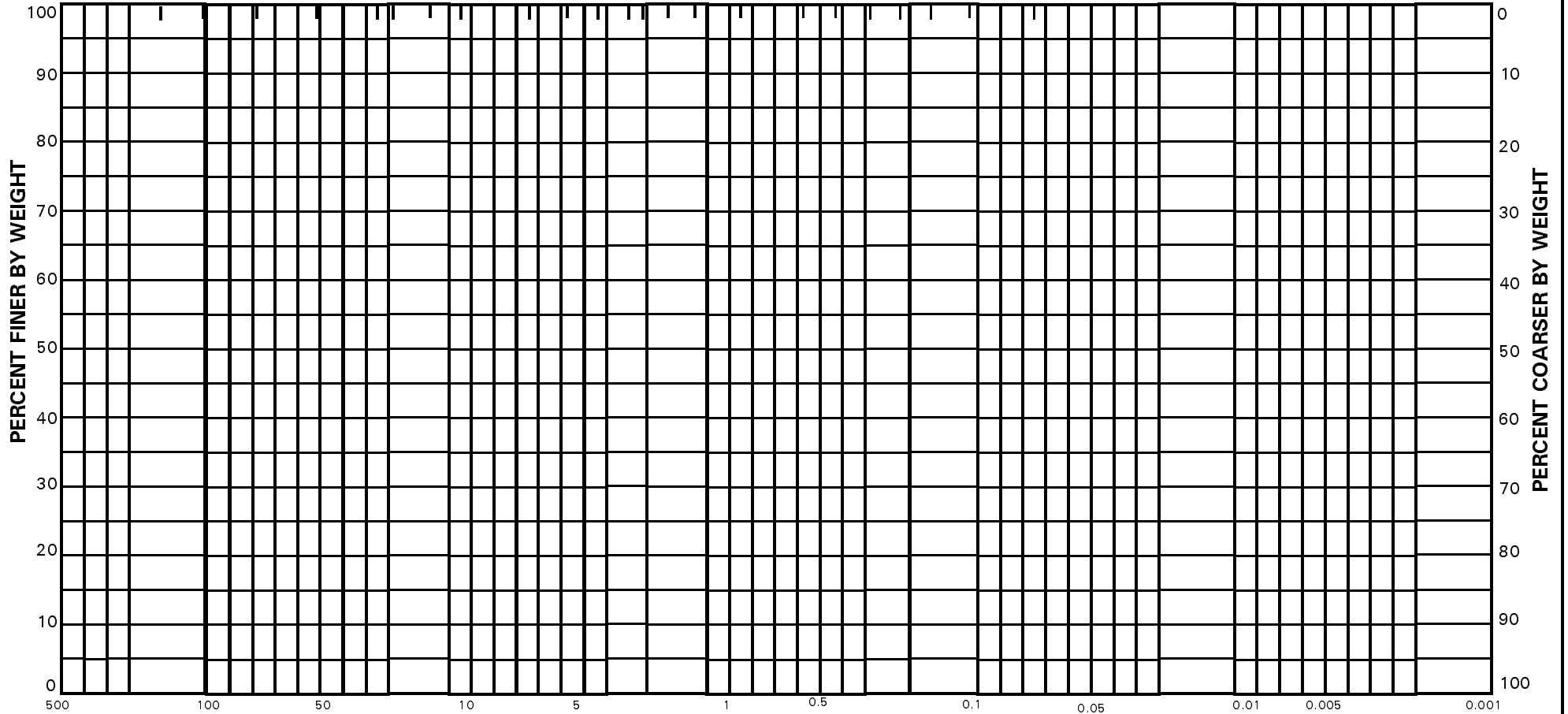
If sanding rate exceeds specifications, describe measures taken between tests:

U.S. STANDARD SIEVE OPENING IN INCHES

U.S. STANDARD SIEVE NUMBERS

HYDROMETER

6 4 3 2 1 1/2 1 3/4 1/2 3/8 3 4 6 8 10 14 16 20 30 40 50 70 100 140 200



GRAIN SIZE IN MILLIMETERS

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI	Project	
								Area
								Boring
GRADATION CURVES								Date

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SECTION 33 27 20
RELIEF WELL COLLECTOR SYSTEM AND MANHOLES

PART 1 - GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all material, supplies, equipment, and performing all labor for the design, manufacture, care, handling, transportation, placement, and proper installation of the relief well collection system, including lateral pipes and manholes with frames and lids, and their structural components, and discharge pipe manholes with frames and lids, and as specified herein. The relief well collector system includes but is not limited to: relief well manholes, reinforced concrete pipes, and collector manholes for the collector system, including manhole frames and lids/covers, which shall be constructed as specified herein and as shown on the drawings. Reinforced concrete pipe and manholes for the discharge pipes shall conform to SECTION 31 26 11 - REINFORCED CONCRETE PIPE FOR DISCHARGE PIPE AND PRECAST DISCHARGE PIPE MANHOLES.

1.2 APPLICABLE PUBLICATIONS. All referenced publications shall be the most current version, edition, standard, latest revision, or reapproval unless otherwise stated. The publications and standards listed below will be referred to only by the basic designation, and shall form a part of this specification to the extent indicated by the references thereto:

1.2.1 American Society for Testing and Materials (ASTM).

ASTM A 48	Gray Iron Castings
ASTM A 126	Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A 312	Seamless and Welded Austenitic Stainless Steel Pipes
ASTM A 536	Ductile Iron Castings
ASTM B 98	Copper-Silicon Alloy Rod, Bar, and Shapes
ASTM B 584	Copper Alloy Sand Castings for General Applications
ASTM C 76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C 443	Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
ASTM C 478	Precast Reinforced Concrete Manhole Sections
ASTM C 990	Joints for Concrete pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants

ASTM C 1107 Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

1.2.3 American Association of State Highway and Transportation Officials (AASHTO).

AASHTO M-198 B Joints for Circular Concrete Sewer and Culvert Pipe
Using Flexible Watertight Gaskets

1.2.4 American Concrete Pipe Association (ACPA).

"Concrete pipe Design Manual", Nineteenth Printing (Revised) October, 2011.

1.2.5 U. S. Army Corps of Engineers Manual (EM).

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

1.2.6 Metropolitan Sewer District (MSD).

"Standard Construction Specifications For Sewers and Drainage Facilities", 2009, and "Standard Details of Sewer Construction", 2009.

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 to the Contracting Officer in accordance with SECTION 01 13 00 - SUBMITTAL PROCEDURES:

1.3.1 Instructions. Placing Pipe and Alignment Plan; "GA". Printed copies of the manufacturer's recommendations for installation procedures of the material being placed shall be furnished prior to installation. This also includes submitting a plan drawing of pipe layout and documentation by manufacturer verifying type(s) of joints and that type(s) of joint are/is appropriate and will seal properly for the intended use and installation shown on the drawings.

1.3.2 Pipe Certificates. Pipe Certification; "GA". Certified copies of test reports and structural designs demonstrating conformance to applicable pipe component specifications, before the pipes are installed.

1.3.3 Manhole Certificates. Manhole Certification; "GA". Certified copies of test reports and structural designs demonstrating conformance to applicable manhole component specifications, including frames and lids/covers, before manholes are installed.

1.3.4 Preformed Flexible Joint Sealants; "GA". Submit manufacturer's literature certifying compliance with MSD Standard Construction Specifications For Sewers and Drainage Facilities, PART 4 PIPE SEWER CONSTRUCTION, Section G. Structures, Paragraph 4. Precast Manholes, Inlets and Appurtenances, Subparagraph c.

1.4 DELIVERY, STORAGE, AND HANDLING.

1.4.1 Delivery and Storage. Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. Materials shall not be stored directly on the ground. The inside of pipes, manhole sections and fittings shall be kept free of dirt and debris. Gasket materials and plastic materials shall be protected from exposure to the direct sunlight over extended periods.

1.4.2 Handling. Materials shall be handled in such a manner as to ensure delivery to the work site in sound, undamaged condition. Pipe shall be carried to the trench excavation, not dragged.

PART 2 - PRODUCTS

2.1 MANHOLES.

2.1.1 Relief Well Manholes. The relief well manholes shall conform to the lines, grades, and dimensions as shown on the drawings. The top elevation of the manhole cover shall be flush with the surrounding ground surface. The manhole sections shall be 48-inch interior diameter (ID) precast reinforced concrete manhole sections. The precast concrete manhole sections shall conform to ASTM C 478 and SECTION 03 34 25 - PRECAST CONCRETE. The finish floor of the manholes shall be constructed of cast-in-place concrete conforming to SECTION 03 33 00 - CAST-IN-PLACE CONCRETE as shown on the drawings. Manhole sections shall be complete with risers, adapter rings, precast concrete manhole covers and shall be designed and manufactured in accordance with ASTM C 478 and current MSD Standards. The manhole cover opening frame and bronze survey marker shall be cast into each manhole cover at the time of manufacture. Manhole steps shall be embedded into the wall a minimum of 3.0 inches but shall not be extended on the outside of the structure. Manhole steps shall be cast into the reinforced concrete manhole wall at locations as shown on the drawings. Elastomeric O-ring conforming to ASTM C 443 or flexible watertight preformed butyl mastic joint sealants conforming to AASHTO M-198B or ASTM C 990 shall be used. Prior to placing the joint sealants, the concrete joint surfaces shall be clean and dry. Either elastomeric O-ring or double rings, coils, or ropes of butyl mastic joint sealants shall be applied to each concrete joint per the manufacturer's product instructions. The oversized pipe openings shall be cast into the manhole sections to allow for field adjustments.

2.1.2 Relief Well Manhole Frames and Hinged Lids. The relief well manhole frames and hinged lids shall be heavy duty, constructed of cast gray iron conforming to ASTM A 48, Class 35B, and shall have a minimum tensile strength of 35,000 pounds per square inch. The frames and hinged lids shall be designed for AASHTO H-20 loadings. The relief well manhole frames shall have clear square openings of 29 inches X 29 inches with hinged lids. The lids shall be constructed with stainless steel butt hinges and waterproof lift handles. The frames shall be embedded into the precast manhole covers in accordance with manufacturer's recommendations.

2.1.3 Collector Manholes. The collector manholes shall conform to the lines, grades, and dimensions as shown on the drawings. The top elevation of the manhole cover shall be flush with the surrounding ground surface. The collector manhole sections shall be 72-inch interior diameter (ID) precast reinforced concrete manhole sections. The precast concrete manhole sections shall conform to ASTM C 478 and SECTION 03 34 25 - PRECAST CONCRETE. Collector manholes shall be complete with precast concrete manhole sections, floors, risers, tapered risers, adapter rings, precast closed-type cast iron manhole covers and shall be designed and manufactured in accordance with ASTM C 478 and to the current MSD Standards and Specifications. Collector manholes shall be complete with precast concrete manhole sections, floors, risers, tapered risers, adapter rings, precast concrete manhole covers and shall be designed and manufactured in accordance with ASTM C 478. Manhole steps shall be embedded into the wall a minimum of 3.0 inches but shall not be extended on the outside of the structure. Manhole steps shall be cast into the reinforced concrete manhole wall at locations as shown on the drawings. Flexible watertight elastomeric O-ring joint conforming to ASTM C 443 or preformed butyl mastic joint sealants conforming to AASHTO M-198B or ASTM C 990 shall be used. Prior to placing the joint sealants, the concrete joint surfaces shall be clean and dry. Either elastomeric O-rings or double rings, coils or ropes of butyl mastic joint sealants shall be applied to each concrete joint per the manufacturer's product instructions. The oversized pipe openings shall be cast into the manhole sections to allow for field adjustments.

2.1.4 Collector Manhole Frames and Lids. The collector system manhole frames and lids shall be heavy duty, constructed of cast gray iron conforming to ASTM A 48, Class 35B, and shall have a minimum tensile strength of 35,000 pounds per square inch. The frames and lids shall be designed for AASHTO H-20 loadings. The relief well manhole frames shall have clear round openings of 24 inches in diameter. The lids shall be solid heavy duty cast gray iron with at least one lifting notch. The storm inlet manholes shall have grated lids as shown on the contract drawings. The frames shall be embedded into the precast manhole covers in accordance with manufacturer's recommendations.

2.1.5 Manhole Steps. The manhole steps shall be constructed of cast gray iron, copolymer polypropylene plastic coated ½-inch, grade 60 steel reinforcement step, or ductile iron castings. The step materials shall have a minimum tensile strength of 35,000 pounds per square inch. The gray iron castings shall conform to ASTM A 48, Class 35B. The ductile iron castings shall conform to ASTM A 536, Grade 80-56-06.

2.2 LATERAL PIPE AND COLLECTOR PIPE. Lateral pipe and collector pipe shall be constructed with precast reinforced concrete pipe. The reinforced concrete pipe (RCP) shall be designed and manufactured in accordance with ASTM C 76 for Class IV, Wall B, in accordance with SECTION 03 34 25 - PRECAST CONCRETE, capable of withstanding an AASHTO H-20 loading, and as shown on the drawings. All reinforced concrete pipe joints shall be tongue and groove type joints. The connections between the manholes and the reinforced concrete pipes as well as between adjoining pipe sections shall be made with a nonshrink grout applied in the field.

2.3 MANHOLE JOINT SEALANTS.

2.3.1 Elastomeric O-ring Joint Sealants. The elastomeric O-ring joint sealants shall be high quality material and conform to ASTM C 443.

2.3.2 Flexible watertight preformed butyl Mastic Joint Sealants. The flexible watertight preformed butyl mastic joint sealants shall conform to AASHTO M-198 Type B or ASTM C 990. The sealants shall consist of high quality butyl rubber with at least 98% solids to minimize hardening, shrinkage, and oxidation. The joint sealants shall be at least ½-inch, preformed coils or ropes and supplied in ready-to-apply forms. The preformed joint sealant coil or rope shall be applied so the ends meet and not overlapped.

2.4 NONSHRINK GROUT. The nonshrink grout shall consist of a prepackaged material conforming to the requirements of ASTM C 1107. Nonshrink grout shall be used for the joint connections between the manholes and pipes as well as between adjoining pipe sections as shown on the drawings. The quantity of water in the mixture shall be sufficient to produce a stiff workable grout. Water shall be clean and free of harmful acids, alkalizes, and organic impurities. The grout shall be used within 30 minutes after the ingredients are mixed with water. The inside of the joint shall be wiped clean and finished smooth. The grout head on the outside shall be protected from air and sun with a proper covering until satisfactorily cured.

2.5 FLOWABLE FILL. The flowable fill to be used by the Contractor shall meet the specifications in Section 621 - FLOWABLE FILL, Article 621.4 of the MoDOT Missouri Standard Specifications for Highway Construction, dated 2011. The flowable fill for the lateral and collector pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and as shown on the drawings.

2.6 BACKFILL MATERIALS. The backfills for the relief well manholes, collector manholes, lateral pipes, and collector pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and as shown on the drawings.

2.7 BRONZE SURVEY MARKERS. Bronze survey markers shall be cast into the precast concrete relief well manhole covers. The bronze survey markers shall be made from silicon bronze bar, orbitally formed, and conforms to ASTM B 98. The survey marker shall have a 4-inch diameter domed cap, "C" style (U.S. Army Corps of Engineers Type 1 Disc) with a minimum 0.75-inch diameter, 3-inch long split-style tapered stem.

PART 3 - EXECUTION

3.1 PRECAST CONCRETE OPERATIONS. The Contractor shall construct the required precast concrete components to include but not be limited to the items specified herein, ASTM C 76, ASTM C 478, SECTION 03 34 25 - PRECAST CONCRETE, and as shown on the drawings. One bronze survey marker, as

specified in paragraph BRONZE SURVEY MARKERS, shall be embedded in each relief well manhole cover as shown on the drawings.

3.2 EXCAVATION AND FOUNDATION PREPARATION. The excavation and foundation preparation to construct the relief well manholes and collector system and the discharge pipe manholes and discharge pipes shall conform to the requirements specified in SECTION 31 22 00- EARTHWORK.

3.3 PIPE AND MANHOLE PLACEMENT. All pipe and manhole components shall conform to the requirements specified herein. Each collector manhole section, relief well manhole section, discharge pipe manhole section, lateral pipe section, collector pipe section, discharge pipe section, riser, cover, and all other components shall be carefully examined before being permanently placed and secured. Defective or damaged components and sections shall not be used. The collector pipes, lateral pipes, and discharge pipes shall be laid to the lines and grades as shown on the drawings. Proper facilities and equipment shall be provided for lowering sections of pipe into trenches. Lifting lugs in vertically elongated metal pipe shall be placed in the same vertical plane as the major axis of the pipe. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Dewatering and diversion of drainage during construction shall be provided as necessary. Laying the reinforced concrete pipe shall start at relief well RW-01 and proceed up grade with tongue ends of tongue-and-groove pipe pointing in the direction of the flow. Concrete pipe ends shall be protected to assure sand backfill does not enter pipe during backfill operations. The Contractor shall secure the in-place pipe sections to maintain pipe alignment with a maximum tolerance of 1.0-inch from the designed pipe centerlines. The Contractor shall place and compact the backfills in accordance with the requirements specified in SECTION 31 22 00 - EARTHWORK. When the collector pipe backfills are between 12 and 24 inches above the top of the collector pipes, the pipes shall be inspected to determine whether significant displacement has occurred. This inspection shall be conducted in the presence of the Contracting Officer. The pipe shall be inspected by shining a laser between manholes and the far end of the pipe. If, in the judgment of the Contracting Officer, the interior of the pipe shows poor alignment of more than 1.0-inch off centerline or any other defects that would cause improper functioning of the system, the defects shall be remedied as directed at no additional cost to the Government. The maximum tolerance for the placement of the relief well manholes and collector system shall be 1.0-inch plus or minus in any and all directions.

3.4 JOINTS. The joints between the manhole sections and adjacent pipe sections shall be made with elastomeric O-rings or flexible watertight preformed butyl mastic joint sealants that conform to the requirements specified in paragraph MANHOLE JOINT SEALANTS. Prior to placing the joint sealants, the concrete joint surfaces shall be clean and dry. Elastomeric O-rings or double rings, coils or ropes of butyl mastic joint sealants shall be applied to each concrete joint per the manufacturer's product instructions. Pipes connecting to the manholes and adjacent pipe sections shall be aligned through the preformed openings and secured with a nonshrink grout that conforms to or exceeds the requirements in paragraph NONSHRINK GROUT and as shown on the drawings.

3.5 FLOWABLE FILL AND BACKFILL MATERIALS. After all pipe and manholes are in place, flowable fill shall be poured around the pipes and around the manholes to the dimensions, elevations and/or callouts shown on the drawings. The backfill materials for the relief well manholes, collector manholes, lateral pipes and collector pipes shall conform to the requirements specified in SECTION 31 22 00 - EARTHWORK and installed as shown on the drawings. The final backfill surface including the topsoil shall be flush with the surrounding ground surfaces.

3.6 FINAL DRESSING OF ALL DISTURBED AREAS. All disturbed areas to be covered with turf shall be dressed smooth. All areas to be covered with concrete will be dressed smooth and paved in accordance with the specified applicable sections in DIVISION 03 -CONCRETE.

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