

LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

ADMINISTRATIVE RECORD

VOLUME 1 of 1

1985

**Bate Stamp Numbers
000881 - 001189**

Prepared for:

**Department of the Army
Longhorn Army Ammunition Plant
Marshall, Texas 75671-1059**

1995

**LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD - CHRONOLOGICAL INDEX**

VOLUME 1 of 1

1985

- A. **Title:** Newspaper Article - Despite Caddo Protest, Panel Oks Waste Discharge Permit
 Group(s): All
 Site(s): General
 Location: Longhorn Army Ammunition Plant, Marshall, Texas
 Company: Marshall News Messenger
 Author(s): Jim Davis
 Recipient: U. S. Public
 Date: February 28, 1985
 Bate Stamp: 000881
- B. **Title:** Scope of Work - Specifications For Closure Of Unlined Evaporation Pond
 Project No. DACA 87-84-C-0039
 Group(s): 2 (Partial)
 Site(s): LHAAP-18 & LHAAP-24 Burning Ground / Washout Pond & Evaporation Pond
 Location: Longhorn Army Ammunition Plant, Marshall, Texas
 Agency: U.S. Army Corps Of Engineers
 Author(s): Kindle, Stone & Associates, Inc
 Recipient: Bidders
 Date: August, 1985
 Bate Stamp: 000882 - 001178
- C. **Title:** Memorandum - AEHA Solid Waste Consultation
 Sanitary Landfill Closure Plan
 No. 38-26-0498-86
 Group(s): 2 (Partial)
 Site(s): LHAAP-12 Active Landfill
 Location: Longhorn Army Ammunition Plant, Marshall, Texas
 Agency: U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground
 Author(s): U.S. Army Environmental Hygiene Agency
 Recipient: Commander, USA Material Development And Readiness Command
 Date: December 28, 1985
 Bate Stamp: 001179 - 001189

July 12, 1995

Despite Caddo protest, panel OKs waste discharge permit

By JIM DAVIS

Harte-Hanks Austin Bureau

AUSTIN — Despite protests from the Greater Caddo Lake Association, the Texas Water Commission on Wednesday unanimously approved a temporary waste discharge permit for the Longhorn Army Ammunitions Plant.

The permit will require the plant to monitor the discharge to make sure that lead and barium are not found in amounts higher than allowed by state regulations.

Longhorn asked for a temporary permit authorizing the discharge of up to 3.6 million gallons of industrial waste into Caddo Lake. Plant representatives said the treated discharge was necessary to close an unlined evaporating pond used to store industrial wash water.

Cliff Carpenter of Longview, representing the

Greater Caddo Lake Association, said no discharge should be allowed into the lake.

"We believe deep-ground injection would be a better solution," he said.

Edward Meinert, civil engineer with the U.S. Army Corps of Engineers, told the three-member commission that injection would cost about \$600,000 rather than the \$400,000 projected under the plan to discharge the water after chemical treatment.

He also said that injection could have some environmental dangers to ground water. "It's a liability that could come back to us in the future," he added.

Carpenter argued, however, that the dangers from injection were "possible but not probable." He said his organization, which has about 1,000 members who live or own property around the lake, opposes any discharge into the

lake. A. Bruce Childress, environmental coordinator of the plant, said the water in the pond comes from old equipment wash downs and contains contaminants "from the preparation of rocket propellants."

Currently, the plant uses an evaporation pilot plant that uses deep-ground injection as a disposal method. But that process can handle only about 5,000 gallons a day, which is about the current level of wastewater produced, he added.

The commission's staff reported that it saw no problems for Caddo Lake in the discharge application as long as proper monitoring occurs. The testing for dangerous metals will be conducted by an outside firm.

The Texas Department of Water Resources

See STAFF, page 7A

State water panel

CONTINUED FROM PAGE 1A

limits are 4 parts-per-million for barium and 1 part per million of lead, that is higher than standards set by the Texas Department of Health for domestic consumption, but a health department spokesman earlier said the discharge into Caddo Lake as proposed may be undetectable once it is diluted in the reservoir.

Longhorn plans to mix cement

the removal of dangerous chemicals. The recovered sludge will be taken to a distant hazardous waste disposal site for burial.

Upon the water department staff's recommendation, the commission extended the time limit on the discharge permit from six nine months. The staff said that would prevent the plant from having to return for an extension if something caused a delay in

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**US Army Corps
of Engineers**

Fort Worth District

SOLICITATION NO. DACA63-85-B-0238
DATE: AUGUST 1985

KINDLE, STONE & ASSOCIATES, INC.
ENGINEERS-PLANNERS
LONGVIEW, TEXAS

LONGHORN ARMY AMMUNITION PLANT, TEXAS

SPECIFICATIONS FOR

CLOSURE OF UNLINED EVAPORATION POND
PROJECT NO. DACA 87-84-C-0039

NOTE

THIS IS A 100% SET ASIDE FOR
SMALL BUSINESS CONCERNS

000883

NOTICES

I. SOLICITATION DEFINITIONS - SEALED BIDDING (APR 1985)

"OFFER" MEANS "BID" IN SEALED BIDDING

"SOLICITATION" MEANS AN INVITATION FOR BIDS IN SEALED BIDDING. (FAR 52.214-1)

NOTE: Wherever the words "GENERAL PROVISIONS" and "SPECIAL PROVISIONS" occur, they shall be deemed to refer to "CONTRACT CLAUSES" and "SPECIAL CONTRACT CLAUSES," respectively.

II. BIDDERS MUST PROVIDE FULL, ACCURATE, AND COMPLETE INFORMATION AS REQUIRED BY THIS SOLICITATION AND ITS ATTACHMENTS. THE PENALTY FOR MAKING FALSE STATEMENTS IN BIDS IS PRESCRIBED IN 18 USC 1001. (FAR 52.214-4)

III. NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.

IV. NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION. FAILURE OF A BIDDER OR OFFEROR TO AGREE TO THE CERTIFICATION WILL RENDER HIS BID OR OFFER NONRESPONSIVE TO THE TERMS OF SOLICITATIONS INVOLVING AWARDS OF CONTRACTS EXCEEDING \$10,000 WHICH ARE NOT EXEMPT FROM THE PROVISIONS OF THE EQUAL OPPORTUNITY CLAUSE. (FAR 52.222-21)

PROJECT INFORMATION

I. For information regarding site condition see INSTRUCTIONS TO BIDDERS - PART I.

II. For technical information regarding plans and specifications contact Fort Worth District Office, Corps of Engineers, Fort Worth, Texas, telephone AC 817-334-3912. (FAR 36.303)

III. For information regarding bidding procedures, bonds, additional sets of plans and specifications, and lists of plans holders contact Procurement and Supply Division, telephone AC 817-334-2130 or visit Room 13A42, 819 Taylor Street, Fort Worth, Texas. Collect calls not accepted. (FAR 36.303)

IV. Bids will be publicly opened, at the time and date stated in the solicitation, in Room 13A47, 819 Taylor Street, Fort Worth, Texas.

V. HAND CARRIED BIDS: Hand carried bids prior to 10:30 a.m., must be deposited in the "Bid Depository" in Room 13A42, 819 Taylor Street, Fort Worth, Texas. Hand carried bids after 10:30 a.m. must be deposited in the "Bid Depository" in Room 13A47, prior to the time stated for opening. (FAR 36.303) (Note: See Instructions to Bidders - Part II for other bidding instructions.)

VI. ESTIMATED CONSTRUCTION COST: The estimated cost of the proposed construction is between \$500,000 and \$1,000,000. (FAR 36.204)

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Solicitation, Offer and Award

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Representations and Certifications

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Contract Clauses

Wage Rates

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- 1B Contractor Quality Control System
- 1C Warranty of Construction
- 1D Additional Safety Measures
- 1E Environmental Protection
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Division 8 - Doors and Windows (None in this job)

Division 9 - Finishes (None in this job)

Division 10 - Specialties (None in this job)

Division 11 - Equipment (None in this job)

Division 12 - Furnishings (None in this job)


Division 13 - Special Construction (None in this job)

Division 14 - Conveying Systems (None in this job)

Division 15 - Mechanical (None in this job)

Division 16 - Electrical (None in this job)

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SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO. DACA63-85-B-0238	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 85 AUG 19	PAGE OF PAGES 1 of 2
	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 Department of the Army Corps of Engineers Fort Worth District	CODE	8. ADDRESS OFFER TO U.S. Army Engineer District, Fort Worth ATTN: Procurement and Supply Division P.O. Box 17300 Fort Worth, Texas 76102-0300		
9. FOR INFORMATION CALL: 	A. NAME See Project Information -	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) Back of Cover Sheet		

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):

Closure of Unlined Evaporation Pond
Phase II
Longhorn Army Ammunition Plant, Texas

11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>*</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See <u>*Special Contract</u>)	
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 10
13. ADDITIONAL SOLICITATION REQUIREMENTS:	
A. Sealed offers in original and _____ copies to perform the work required are due at the place specified in Item 8 by <u>11 a.m. (hour)</u> local time <u>19 Sep 85</u> (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.	
B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required.	
C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.	
D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.	

53.301-1442

STANDARD FORM 1417 BACK (REV. 4-6)

000088

Solicitation No. DACA63-85-B-0238

BIDDING SCHEDULE

(To be attached to SF 1442)

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
1	Removal, Transportation, and Disposal of Sludge and Contaminated Soil	4,650	C.Y.	\$ 163 ⁰⁰	\$
2	Common Fill	28,950	C.Y.	\$	\$
3	Chemical Drying Agent (Cement)	22,184 ⁰⁰	CWT.	\$	\$
4	Contamination Test	60	Ea.	\$	\$
5	Clay Barrier, Subdrainage System, Fencing, Establishment of Turf, Demolition, and all other work not separately listed	Job	Sum	***	\$
TOTAL					\$

NOTES:

1. ARITHMETIC DISCREPANCIES: (1975 JUL)

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

- (1) Obviously misplaced decimal points will be corrected;
- (2) In case of discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected; and
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purposes of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, extensions, and totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids. (EFARS 14.201/90)

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Solicitation No. DACA63-85-B-0238

BIDDING SCHEDULE (cont)

NOTES: (Cont'd)

2. 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. (SWFPS)

3. Bidders must bid on all items. (SWFPS)

NOTICE TO BIDDERS
INFORMATION ON PAGES RC-1 THROUGH RC-6
IS TO BE FILLED IN AS REQUIRED,
AND SUBMITTED WITH SF 1442

REPRESENTATIONS AND CERTIFICATIONS

IFB NO. _____
Project Name/Location: _____

Bidder's Name and Address

Date: _____

The bidder makes the following representations and certifications as a part of the bid identified above. (Check appropriate boxes.)

1. SMALL BUSINESS CONCERN REPRESENTATION (APR 1984)(FAR 52.219-1)

The offeror represents and certifies as part of its offer that it ☐ is, ☐ is not a small business concern that ☐ all, ☐ not all supplies to be furnished will be manufactured or produced by a small business concern in the United States, its possessions, or Puerto Rico. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

2. SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (APR 1984)(FAR 52.219-2)

a. **REPRESENTATION.** The offeror represents that it ☐ is, ☐ is not a small disadvantaged business concern.

b. **DEFINITIONS.**

(1) "Asian-Indian American," as used in this provision, means a United States citizen whose origins are in India, Pakistan, or Bangladesh.

(2) "Asian-Pacific American," as used in this provision, means a United States citizen whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands, the Northern Mariana Islands, Laos, Cambodia, or Taiwan.

(3) "Native Americans," as used in this provision, means American Indians, Eskimos, Aleuts, and native Hawaiians.

(4) "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and

(Representations and Certifications - continued)

operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in CFR 121.

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

c. QUALIFIED GROUPS. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans, and other individuals found to be qualified by the SBA under 13 CFR 124.1.

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

a. REPRESENTATION: The offeror represents that it ☐ is, ☐ is not a women-owned small business concern.

b. DEFINITIONS:

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

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

4. CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984)(FAR 52.203-4)

a. REPRESENTATION: The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror -

(NOTE: The offeror must check the appropriate boxes. For interpretation of the representation, including the term "bona fide employee," see Subpart 3.4 of the Federal Acquisition Regulation.)

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

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

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

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

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

5. TYPE OF BUSINESS ORGANIZATION - SEALED BIDDING (APR 1985)(FAR 52.214-2)

The bidder, by checking the applicable box, represents that it operates as ☐ a corporation incorporated under the laws of the State of _____, ☐ an individual, ☐ a partnership, ☐ a nonprofit organization, or ☐ a joint venture.

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

a. The offeror certifies that -

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

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

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

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

(Representations and Certifications - continued)

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

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs a.(1) through a.(3) above.

(Insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

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

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

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

7. PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (APR 1984)(FAR 52.222-22)

The offeror represents that -

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

b. It ☐ has, ☐ has not, filed all required compliance reports; and

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

(Representations and Certifications - continued)

8. PARENT COMPANY AND IDENTIFYING DATA (APR 1984)(FAR 52.214-8)

a. A "parent" company, for the purpose of this provision, is one that owns or controls the activities and basic business policies of the bidder. To own the bidding company means that the parent company must own more than 50 percent of the voting rights in that company. A company may control a bidder as a parent even though not meeting the requirement for such ownership if the parent company is able to formulate, determine, or veto basic policy decisions of the offeror through the use of dominant minority voting rights, use of proxy voting, or otherwise.

b. The bidder ☐ is, ☐ is not (check applicable box) owned or controlled by a parent company.

c. If the bidder checked "is" in paragraph b. above, it shall provide the following information:

Name and Main Office Address of Parent Company (Include Zip Code)	Parent Company's Employer's

d. If the bidder checked "is not" in paragraph b. above, it shall insert its own Employer's Identification Number on the following line.

9. CERTIFICATION OF NONSEGREGATED FACILITIES (APR 1984)(FAR 52.222-21)

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

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

(Representations and Certifications - continued)

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

(1) Obtain identical certification from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;

(2) Retain the certification in the files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

**"NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS
FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES**

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

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

10. CLEAN AIR AND WATER CERTIFICATION (APR 1984)(FAR 52.223-1)

The Offeror certifies that -

a. Any facility to be used in the performance of this proposed contract is ☐ , is not ☐ listed on the Environmental Protection Agency List of Violating Facilities;

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

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

INSTRUCTIONS TO BIDDERS

PART I

1. BONDS (FAR 28.102-2)

Bonds listed below are required when the bid amount exceeds \$25,000.

a. Bid Bonds. Each bidder shall submit with his bid a Bid Bond (Standard Form 24) with good and sufficient surety or sureties acceptable to the Government, or other security as provided in paragraph 16 of Instructions to Bidders, Part II, in the form of twenty (20) percent of the bid price or Three Million Dollars (\$3,000,000) whichever is lesser. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

b. Performance and Payment Bonds. Within ten (10) days after the prescribed forms are presented to the bidder to whom award is made for signature, a written contract on the form prescribed by the specifications shall be executed and two bonds, each with good and sufficient surety or sureties acceptable to the Government, furnished namely a performance bond (Standard Form 25) and a payment bond (Standard Form 25A). The penal sums of such bonds will be as follows:

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

(2) Payment Bonds.

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

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

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

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

The performance bond shall specifically provide for payment to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the principal in carrying out the construction contract with respect to which this bond is furnished.

FAILURE TO INCLUDE BID BOND OR OTHER BID SECURITY ON TIME MAY BE CAUSE FOR REJECTION OF THE BID AS NONRESPONSIVE. LATE BOND OR OTHER SECURITY WILL BE TREATED IN THE SAME MANNER AS LATE BIDS. (SEE PARAGRAPH 15. OF INSTRUCTIONS TO BIDDERS, PART II.) (FAR 28.102-3)

2. AVAILABILITY OF PLANS AND SPECIFICATIONS (EFARS 53.2/9000-1(a))

Sets of drawings, reduced to half-size, and of specifications will be furnished upon receipt of payment of \$11.00 per set. Sets of drawings, full-size, and of specifications will be furnished upon receipt of payment of \$21.00 per set. If individual full-size plan sheets are requested, they will be furnished at the rate of \$0.75 for each sheet requested, but with a minimum charge of \$1.00. Individual half-size plan sheets will not be issued. The maximum charge shall not exceed the charge for a full set of plans. No refund of the payment for drawings will be made and the drawings need not be returned to the District Engineer. Additional copies of the specifications alone will be furnished an applicant at the rate of \$6.00 per copy. Payment will be made by cash, check or money order and delivered to the Finance and Accounting Officer, Fort Worth District, Corps of Engineers, P.O. Box 17300, Fort Worth, Texas 76102-0300. Checks and money orders should be made payable to "F&A Officer, USAED, FTW."

3. EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)(FAR 52.214-6)

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

4. NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (APR 1984)(FAR 52.219-6)

a. Definition.

"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

b. General.

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

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

c. Agreement.

A manufacturer or regular dealer submitting an offer in his own name agrees to furnish in performing the contract, only end items manufactured or produced by small business concerns inside the United

States, its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. However, this requirement does not apply in connection with construction or service contracts.

5. SMALL BUSINESS SIZE STANDARD (FAR SUPP 19.102)(13 CFR 121)

This procurement is 100% Small Business Set-aside. A small business concern for the purpose of this procurement is one, including its affiliates, whose average annual receipts for the preceding three fiscal years do not exceed \$17,000,000.

6. Standard Industrial Classification is 1629.

7. AVAILABILITY OF UTILITY SERVICES (FAR 36.303)

Water, gas, and electricity are not available from Government-owned and operated systems.

8. PERFORMANCE OF WORK BY CONTRACTOR (FAR 36.501)

Unless he has submitted such description with his bid, the successful bidder must furnish the Contracting Officer within 20 days after award, a description of the work which he intends to perform with his own organization (e.g., earthwork, paving, brickwork, or roofing), the percentage of the total work this represents, and the estimated cost thereof.

9. SITE VISIT (FAR 36.303(C)(5))

Bidder's attention is directed to the contract clause SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK. Information relative to site visit/inspection prior to bidding may be obtained from:

Area Engineer
Eastern Area Office
US Army Engineer District, Fort Worth
Bldg 3, Suite 342
2924 Knight Street
Shreveport, Louisiana 71105-2473
Phone: 318-226-5365

10. Prior to inspection of the premises, bidders shall make arrangements with the area office listed above. After arrangements have been made, bidders are invited to inspect the premises between 9 a.m. and 4 p.m. on Tuesdays and Thursdays, at which times a representative of the Government will be available for assistance.

(a) The Area engineer will prearrange and coordinate bidder inspections of the site with the installation commander.

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(b) Size of the bidder inspection party will be a maximum of six persons, with no more than 4 persons per bidder inspection party recommended.

(c) Bidders interested in site inspection must furnish the following data in writing on company letterhead stationery to the Area Engineer identified above not later than nine calendar days prior to the date of the proposed site visit (See Privacy Act statement following paragraph (f) below:

(1) Name, address, and telephone number of firm represented.

(2) Name, position, social security number, date and place of birth, and physical characteristics (color of hair and eyes, weight, and height) of representative making the inspection.

(d) The Area engineer will verify that the persons requesting to visit the site are contractors or suppliers who have a bona fide interest in bidding the project.

(e) Failure to provide the data specified in (c) above, or inability to verify bona fide interest as required in (d) above, will require the Area Engineer to notify the bidder that he will not be permitted to make the requested site visit.

(f) The Area Engineer will confirm the date the bidder will be permitted to see the site.

DATA REQUIRED BY THE PRIVACY ACT OF 1974: The Privacy Act of 1974 requires each individual asked or required to furnish personal information to be advised of the following:

Authority: 10 USC 133

Principal Purpose(s): Required for obtaining information pertaining to architect-engineer firms, contractors, subcontractors and suppliers and their representatives prior to admittance to military bases for the purpose of site inspection prior to design or bid preparation on certain designated contracts.

Routine Uses: (a) To prearrange and coordinate architect-engineer and bidder inspection of the site with the installation commander.

(b) Information may be kept by district, area or project offices and will be furnished to base security police offices.

(c) The age, height, physical characteristics and social security number will be used for law enforcement purposes, as an additional means of identifying persons requesting admission to the site.

(d) Data may result in representative being refused admission to the base.

Mandatory or Voluntary Disclosure and Effect on Individual Not Providing Information: Voluntary - Failure to provide all of the requested information will preclude being admitted to military base for site inspection.

11. GENERAL SAFETY REQUIREMENTS (SWFPS)

The Contractor on any contract resulting from this solicitation will be required to comply with all pertinent provisions of Corps of Engineers EM 385-1-1, dated April 1981, as revised, entitled "Safety and Health Requirements Manual." The Contractor must also comply with Occupational Safety and Health Act (OSHA) standards. OSHA standards are subject to change. It is the Contractor's responsibility to maintain familiarity with OSHA standards which are current. The Contractor must also comply with provisions of the U.S. Army Materiel Development and Readiness Command Manual DARCOM-R-385-100 dated 17 August 1981.

12. DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER REPORTING (DEC 1980) (FAR SUPP 52.204-7004)

In the block with its name and address, the offeror should supply the Data Universal Numbering System (DUNS) Number applicable to that name and address. The DUNS Number should be preceded by "DUNS:". If the offeror does not have a DUNS Number, it may obtain one from any DUN and Bradstreet branch office. No offeror should delay the submission of its offer pending receipt of its DUNS Number.

13. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (APR 1984) (FAR 52.222-23)

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

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

Goals for minority participation
for each trade

22.8%

Goals for female participation
for each trade

6.9%

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

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

(d) The Contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the—

TYLER-LONGVIEW, TX, SMSA

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

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is:

the City of Longview, TX, and the Texas Counties of Gregg and Harrison.

INSTRUCTIONS TO BIDDERS

PART II

1. AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS)(APR 1984)(FAR 52.210-2)

Single copies of specifications cited in this solicitation may be obtained by submitting a written request to the supply point listed below. The request must contain the title of the specification, its number, date, applicable amendment(s), and the solicitation or contract number. In case of urgency, telephone or telegraphic requests are acceptable. Voluntary standards, which are not available to offerors and contractors from Government sources, may be obtained from the organization responsible for their preparation, maintenance, or publication.

Commanding Officer
U.S. Naval Publication and Forms Center
5801 Tabor Avenue
Philadelphia, PA 19120
Telex Number-----834295
Western Union Number-----710-670-1685
Telephone Number----- (215) 697-3321

2. AVAILABILITY OF DESCRIPTIONS LISTED IN DOD DIRECTIVE 5000.19-L, VOLUME II (APR 1984)(FAR SUPP 52.210-7001)

Copies of the Acquisition Management Systems and Data Requirements Control List, DOD Directive 5000.19-L, Volume II, may also be ordered from the supply point listed herein. When requesting a data item description, the request shall cite the applicable data item number set forth in the solicitation.

3. RATED OR AUTHORIZED CONTROLLED MATERIAL ORDERS (APR 1984)(FAR 52.212-7)

Contracts or Purchase Orders to be awarded as a result of this Solicitation shall be assigned a ☐ DX-rating; ☒ DO-rating; ☐ DMS allotment number in accordance with Defense Priorities System Regulation 1 and/or Defense Materials System Regulation 1.

4. Each bidder shall, upon request of the Contracting Officer, furnish a list of the plant available to the bidder and proposed for use on the work. (EFARS 53.2/9000-1(a))

5. AMENDMENT OF INVITATION FOR BIDS (FAR 14.208)

The right is reserved, as the interest of the Government may require, to revise or amend the specifications or drawings or both prior to the date set for opening of bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this Invitation for Bids. If revisions and amendments are of a nature which requires material changes in quantities or prices bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of the issuing officer

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will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

6. ACKNOWLEDGEMENT OF AMENDMENTS TO INVITATIONS FOR BIDS (APR 1984)
(FAR 52.214-3)

Bidders shall acknowledge receipt of any amendments to this solicitation (a) by signing and returning the amendment; (b) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid; or (c) by letter or telegram. The Government must receive the acknowledgement by the time and at the place specified for receipt of bids.

7. MODIFICATION OF BIDS

The Western Union TWX numbers for the Fort Worth District are 910-893-4022 and 910-893-5039; answer-back code is ENGR-DIST-FTW. Bidders may, at their discretion, use this means to modify a previously submitted bid. NOTICE: THE TWO TELETYPE NUMBERS LISTED ARE AVAILABLE ON A FIRST COME FIRST SERVED BASIS AND ARE THEREFORE SUBJECT TO BEING TIED UP BY OTHER MESSAGE TRAFFIC FOR LONG PERIODS OF TIME. ACCORDINGLY, BIDDERS ARE CAUTIONED THAT "LAST MINUTE" MODIFICATIONS OF BIDS MAY BE RECEIVED LATE. THE GOVERNMENT ASSUMES NO RESPONSIBILITY FOR SUCH LATE MODIFICATIONS.

8. NOTICE (SWFPS)

If the work called for by this solicitation is located on a military installation, bidders should check with post/base security to learn if potential employees will be allowed on base to seek employment.

9. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (EFARS 52.2/9108(f))

Whenever a contract or modification of contract price is negotiated, the Contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance with the requirements of paragraph EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE, contained in the SPECIAL CONTRACT CLAUSES of the specifications. A copy of EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" is available for review at the Area/Resident Office as hereinbefore stated.

10. CONTRACT AWARD - SEALED BIDDING - CONSTRUCTION (APR 1985)(FAR 52.214-19)

a. The Government will award a contract resulting from this solicitation to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, price and other factors specified in the solicitation.

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

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

11. PREPARATION OF BIDS - CONSTRUCTION (APR 1984)(FAR 52.214-18)

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

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

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

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

d. Alternate bids will not be considered unless this solicitation authorized their submission.

12. BIDDER'S QUALIFICATIONS (FAR 9.1)

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

13. SUBMISSION OF BIDS (APR 1984)(FAR 52.214-5)

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

b. Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice, if such notice is received by the time specified for receipt of bids.

c. Bidders are requested to furnish the name, address, and phone number of their local bonding agent with their bid. (SWFPS)

d. All bids MUST be clearly identified as such, including the solicitation number, date and time of bid opening, on the OUTSIDE of the sealed envelopes or packages. If a Commercial delivery service is used, make certain that such identification appears on the outside of their special transmittal package. (SWFPS)

14. LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (APR 1984)
(FAR 52.214-7)

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

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

(2) Was sent by mail (or was telegraphic bid if authorized), and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

b. Any modification or withdrawal of a bid is subject to the same conditions as in paragraph a. above.

c. The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerks to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

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

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

f. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and that person signs a receipt for the bid.

15. SERVICE OF PROTEST (JAN 1985)(FAR 52.233-2)

Protests, as defined in section 33.101 of the Federal Acquisition Regulation, shall be served on the Contracting Officer by obtaining written and dated acknowledgement of receipt from the office of Chief, Procurement and Supply Division, Fort Worth District, Corps of Engineers, 819 Taylor Street, Fort Worth, Texas 76102-0300.

16. BID GUARANTEE (APR 1984)(FAR 52.228-1)

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

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

c. If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or give a bond(s) as required by the solicitation within the time specified, the Contracting Officer may terminate the contract for default.

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

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

17. COMPOSITION OF CONTRACTOR (JAN 1965)(FAR SUPP 52.236-7000)

If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

18. SECURITY REQUIREMENTS (APR 1984)(FAR 52.204-2)

(a) This clause applies to the extent that this contract involves access to information classified "Confidential," "Secret," or "Top Secret."

(b) The Contractor shall comply with (1) the Security Agreement (DD Form 441), including the Department of Defense Industrial Security Manual For Safeguarding Classified Information (DOD 5220.22-M), and (2) any revisions to that manual, notice of which has been furnished to the Contractor.

(c) If, subsequent to the date of this contract, the security classification or security requirements under this contract are changed by the Government and if the changes cause an increase or decrease in security costs or otherwise affect any other term or condition of this contract, the contract shall be subject to an equitable adjustment as if the changes were directed under the Changes clause of this contract.

(d) The Contractor agrees to insert terms that conform substantially to the language of this clause, including this paragraph (d) but excluding any reference to the Changes clause of this contract, in all subcontracts under this contract that involve access to classified information.

BIDDERS CHECKLIST

All information required by the terms of the Solicitation must be furnished. MISTAKES OR OMISSIONS CAN BE COSTLY. Important items for you to check are included in but not limited to, those listed below. This checklist is furnished only to assist you in submitting a proper bid. Check as you read.

- ☐ Have you acknowledged all amendments?
- ☐ Have you completed the Bidder's Representations and Certifications?
- ☐ Is your bid properly signed?
- ☐ If a bid guarantee is required, is it included with your bid?
(A late bid guarantee is treated the same as a late bid.)
- ☐ Is your bid guarantee in the proper amount? (Usually 20% of total bid price.)
- ☐ If your bid guarantee is in the form of a bid bond, is the bond properly signed by both the bidder and surety and are all required seals affixed?
- ☐ Is the name in which you submitted the bid the same on your bid as on your bid bond?
- ☐ If required, have you entered a unit price for each bid item?
(The solicitation will specifically state when this is necessary.)
- ☐ Are decimals in unit prices in the proper places? Are your figures legible?
- ☐ Are the extensions of your unit prices, and your total bid price correct?
- ☐ Are all erasures or corrections initialed by the person signing the bid?
- ☐ Have you restricted your bid by altering the provisions of the solicitation?
- ☐ Is the envelope containing your bid properly identified that it is a sealed bid and does it contain the correct solicitation number and bid opening time?
- ☐ Will your bid arrive on time? Late handcarried bids will not be considered. Late mailed bids may be considered if sent by Registered or Certified Mail, 5 days prior to bid opening; if late receipt was due to delay in mails, or if specific requirements have been met. (See paragraph pertaining to "Late Submissions, Modifications, and Withdrawals of Bids.")
- ☐ Telegraphic modifications to a bid: The District's capability to receive messages is limited and could become saturated when numerous bidders are trying to send modifications to their bids. It is the bidder's responsibility to insure that telegraphic modifications are received prior to the time established for bid opening. Telephonic verification of the receipt of a telegraphic bid modification cannot be provided. Late telegraphic modifications cannot be considered except under the conditions contained herein.

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CONTRACT CLAUSES
CONSTRUCTION-INSIDE THE U.S.
Issued by: Department of the Army, Corps of Engineers
Edition of 1 Aug 84

1.1 DEFINITIONS (1984 APR) (ALT 1) (DEVIATION) FAR 52.202-1
(EFARS 52.101(a) and 52.105/90 (a))

(The following clause is applicable if the procurement instrument identification number is prefixed by the letters "DACW.")

(a) The term "head of the agency" or "Secretary" as used herein means the Secretary of the Army; and the term "his duly authorized representative" means the Chief of Engineers, Department of the Army, or an individual or board designated by him.

(b) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(c) The agency board of contract appeals having jurisdiction over all appeals from final decisions of the Contracting Officer under the Contract Disputes Act of 1978 is the Corps of Engineers Board of Contract Appeals, Office of the Chief of Engineers, Pulaski Building, 20 Massachusetts Avenue, N.W., Washington, D.C. 20314. #

1.2 DEFINITIONS (1984 APR) (ALT 1) (DEVIATION) FAR 52.202-1
(EFARS 52.105/90 (b))

(The following clause is applicable if the procurement instrument identification number is prefixed by the letters "DACA.")

(a) "Head of the agency" (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, including any deputy or assistant chief official of the agency, and, in the Department of Defense, the Under Secretary and any Assistant Secretary of the Departments of the Army, Navy, and Air Force and the Director and Deputy Director of Defense agencies; and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary.

(b) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(c) The agency board of contract appeals having jurisdiction over all appeals from final decisions of the Contracting Officer under the Contract Disputes Act of 1978 is the Armed Services Board of Contract Appeals., 200 Stoval Street, Alexandria, Virginia 22332. #

2. OFFICIALS NOT TO BENEFIT (1984 APR) FAR 52.203-1

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

3. GRATUITIES (1984 APR) FAR 52.203-3

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

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

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

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

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

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

(2) In addition to any other damages provided by law, to exemplary damages of not less than three nor more than ten 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.†

4. COVENANT AGAINST CONTINGENT FEES (1984 APR) FAR 52.203-5

(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. #

5. PRIORITIES, ALLOCATIONS, AND ALLOTMENTS (1984 APR)

FAR 52.212-8

(The following clause is applicable to rateable contracts.)

The Contractor shall follow the provisions of Defense Materials System Regulation 1 or Defense Priorities System Regulation 1 (see 32A CFR 621-662) and all other applicable regulations and orders of the Office of Industrial Resource Administration, Department of Commerce, in obtaining controlled materials and other products and materials needed to fill this order. #

6. VARIATION IN ESTIMATED QUANTITY (1984 APR) FAR 52.212-11

(The following clause is not applicable to bid items listed in the "Variations in Estimated Quantities--Subdivided Items" clause and also is not applicable to contracts for dredging work which contain the "Variations in Estimated Quantities--Dredging" clause.)

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. #

7. SUSPENSION OF WORK (1984 APR) FAR 52.212-12

(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. #

8. AUDIT-SEALED BIDDING (1985 APR) FAR 52.214-26

(The following clause is applicable if this contract is in excess of \$100,000.)

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

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

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

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

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

9. PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--**MODIFICATIONS--SEALED BIDDING (1985 APR) FAR 52.214-27**

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, of more than \$100,000 except that this clause does not apply to any modification for which the price is--

- (1) Based on adequate price competition;
 - (2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public;
- OR

- (3) Set by law or regulation.

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

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

10. SUBCONTRACTOR COST OR PRICING DATA--MODIFICATION--SEALED BIDDING (1985 APR) FAR 52.214-28

(a) The requirements of paragraphs (b) and (c) of this clause shall (1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed \$100,000 and (2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed \$100,000 when entered into, or pricing any subcontract modification involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed \$100,000, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless the price is--

- (1) Based on adequate price competition;
 - (2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public;
- OR

- (3) Set by law or regulation.

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

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds \$100,000 when entered into.†

11. EXAMINATION OF RECORDS BY COMPTROLLER GENERAL (1984 APR)

FAR 52.215-1

(a) This clause applies if this contract exceeds \$10,000 and was entered into by negotiation.

(b) The Comptroller General of the United States or a duly authorized representative from the General Accounting Office shall, until 3 years after final payment under this contract or for any shorter period specified in Federal Acquisition Regulation (FAR) Subpart 4.7, Contractor Records Retention, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract.

(c) The Contractor agrees to include in first-tier subcontracts under this contract a clause to the effect that the Comptroller General or a duly authorized representative from the General Accounting Office shall, until 3 years after final payment under the subcontract or for any shorter period specified in FAR Subpart 4.7, have access to and the right to examine any of the subcontractor's directly pertinent books, documents, papers, or other records involving transactions related to the subcontract. "Subcontract," as used in this clause, excludes (1) purchase orders not exceeding \$10,000 and (2) subcontracts or purchase orders for public utility services at rates established to apply uniformly to the public, plus any applicable reasonable connection charge.

(d) The periods of access and examination in paragraphs (b) and (c) above for records relating to (1) appeals under the Disputes clause, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Comptroller General or a duly authorized representative from the General Accounting Office has taken exception shall continue until such appeals, litigation, claims, or exceptions are disposed of.†

12. UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL DISADVANTAGED BUSINESS CONCERNS (1984 APR) FAR 52.219-8

(a) It is the policy of the United States that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United

States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

(c) As used in this contract, the term "small business concern" shall mean a small business as defined pursuant to section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto. The term "small business concern owned and controlled by socially and economically disadvantaged individuals" shall mean a small business concern--

(1) Which is at least 51 percent owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more socially and economically disadvantaged individuals; and

(2) Whose management and daily business operations controlled by one or more of such individuals.

The Contractor shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans and other minorities, or any other individual found to be disadvantaged by the Administration pursuant to section 8(a) of the Small Business Act.

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

13. **SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN (ALTERNATE I) (1984 APR) FAR 52.219-9**

(The following clause is applicable if this contract (1) offers subcontracting possibilities, (2) is expected to exceed \$500,000, or \$1,000,000 in the case of construction of any public facility, and (3) is required to include the clause in FAR 52.219-8.)

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

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

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

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, which addresses separately subcontracting with small business concerns and small disadvantaged business concerns, and which shall be included in and made part of the resultant contract. The subcontracting plan shall be submitted within the time specified by the Contracting Officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

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

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

(2) A statement of--

- (i) Total dollars planned to be subcontracted;
- (ii) Total dollars planned to be subcontracted to small business concerns; and
- (iii) Total dollars planned to be subcontracted to small disadvantaged business concerns.

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

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

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

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

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

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

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

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

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

- (i) Source lists, guides, and other data that identify small and small disadvantaged business concerns.
- (ii) Organizations contacted in an attempt to locate sources that are small or small disadvantaged business concerns.
- (iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating (A) whether small business concerns were solicited and if not, why not, (B) whether small disadvantaged business concerns were solicited and if not, why not, and (C) if applicable, the reason award was not made to a small business concern.
- (iv) Records of any outreach efforts to contact (A) trade associations, (B) business development organizations, and (C) conferences and trade fairs to locate small and small disadvantaged business sources.
- (v) Records of internal guidance and encouragement provided to buyers through (A) workshops, seminars, training, etc., and (B) monitoring performance to evaluate compliance with the program's requirements.
- (vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having company or division-wide annual plans need not comply with this requirement.

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

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

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

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

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

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

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

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

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

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

14. UTILIZATION OF WOMEN-OWNED SMALL BUSINESSES (1984 APR)

FAR 52.219-13

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

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

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

(b) It is the policy of the United States that women-owned small businesses shall have the maximum practicable opportunity to participate in performing contracts awarded by any Federal agency.

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

15. NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (1984 APR)

FAR 52.222-1

(a) If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance

of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer.

(b) The Contractor agrees to insert the substance of this clause, including this paragraph (b), in any subcontract to which a labor dispute may delay the timely performance of this contract; except that each subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify the next higher tier subcontractor or the prime Contractor, as the case may be, of all relevant information concerning the dispute. #

16. CONVICT LABOR (1984 APR) FAR 52.222-3

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

17. DAVIS-BACON ACT (40 U.S.C. 276a to a-7) (1984 JAN)

(a) Minimum wages.

(1) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), 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 equivalent thereof due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics, subject to the provisions of paragraph (a)(4) 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 weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled "Apprentices and Trainees". Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(2) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (A) 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 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; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) 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, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt or will notify the Contracting Officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(C) 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 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. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(D) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (a)(2)(B) and (a)(2)(C) 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.

(3) 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.

(4) 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 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. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)#

**18. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT--OVERTIME
COMPENSATION (1984 JAN) DAR 7-103.16(a)**

This contract, to the extent that it is of a character specified in the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), is subject to the following provisions and to all other applicable provisions and exceptions of such Act and the regulations of the Secretary of Labor thereunder.

(a) **Overtime requirements.** No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such workweek, whichever is greater.

(b) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the provisions set forth in paragraph (a) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the provisions set forth in paragraph (a) of this clause, in the sum of ten dollars (\$10) for each calendar day for which such individual was required or permitted to work in excess of eight (8) hours or in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by the provisions set forth in paragraph (a) of this clause.

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

(d) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the provisions set forth in paragraphs (a) through (d) of this clause and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractors 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.*

19. APPRENTICES AND TRAINEES

(a) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days or probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced

by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on 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 on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on 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 on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

20. PAYROLLS AND BASIC RECORDS (1984 JAN)

(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 three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). 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 (a)(4) 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. (Approved by the Office of Management and Budget under OMB control numbers 1215-0140 and 1215-0017.)

(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 if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB control number 1215-0149.)

(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 the following:

- (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 Regulations, 29 CFR Part 3;
- (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 as 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 above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 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 authorized representatives of the Contracting Officer or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. 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. #

21. COMPLIANCE WITH COPELAND ACT REQUIREMENTS (1984 JAN)

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

22. WITHHOLDING OF FUNDS (1984 JAN)

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 (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, sponsor, applicant, or owner, 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. #

23. SUBCONTRACTS (1984 JAN)

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

24. CONTRACT TERMINATION; DEBARMENT (1984 JAN)

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", "Withholding", "Subcontractors", "Compliance with Davis-Bacon and Related Act Requirements", and "Certification of Eligibility", may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.†

25. DISPUTES CONCERNING LABOR STANDARDS (1984 JAN)

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general Disputes Clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. 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.†

26. COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REQUIREMENTS (1984 JAN)

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

27. CERTIFICATION OF ELIGIBILITY (1984 JAN)

(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.†

28. EQUAL OPPORTUNITY (1984 APR) FAR 52.222-26

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

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

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

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination,

(vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

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

(4) The Contractor shall, in all solicitations or advertisement for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

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

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

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

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

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

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

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.4

29. AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION
(1984 APR) FAR 52.222-27

(a) **Definitions.** "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract. "Director," as used in this clause, means Director, Office of Federal Contract Compliance Programs (OFCCP), United States Department of Labor, or any person to whom the Director delegates authority.

"Employer 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); and

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

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

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

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

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

actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

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

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

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

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

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

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

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

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs,

especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) above.

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

- (i) Providing notice of the policy to unions and to training, recruitment and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;
- (ii) Including the policy in any policy manual and in collective bargaining agreements;
- (iii) Publicizing the policy in the company newspaper, annual report, etc.;
- (iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and
- (v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

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

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

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

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

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

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

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

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

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

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

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

(1) Actively participates in the group;

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

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

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

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

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

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

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

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order

11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

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

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

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

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

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

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

30. AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS (1984 APR) FAR 52.222-35

This clause is applicable pursuant to 41 C.F.R. 60-250, if this contract is for \$10,000 or more.)

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

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

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

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

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

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

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

(b) General.

(1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a special disabled or Vietnam Era veteran. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled and Vietnam Era veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion or transfer;
- (iv) Recruitment;
- (v) Advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings.

(1) The Contractor agrees to list all suitable employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service.

(3) The listing of suitable employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular

group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each state where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(5) Under the most compelling circumstances, an employment opening may not be suitable for listing, including situations when

- (i) the Government's needs cannot reasonably be supplied,
- (ii) listing would be contrary to national security, or
- (iii) the requirement of listing would not be in the Government's interest.

(d) Applicability.

(1) This clause does not apply to the listing of employment openings which occur and are filled outside the 50 states, the District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands.

(2) The terms of paragraph (c) above of this clause do not apply to openings that the Contractor proposes to fill from within its own organization or under a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of its own organization or employer-union arrangement for that opening.

(e) Postings.

(1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor (Director), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified special disabled and Vietnam Era veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Director to enforce the terms, including action for noncompliance.†

31. AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS (1984 APR)

FAR 52.222-36

(Contracts and subcontracts are exempt from the requirements of the following clause with regard to work performed outside the United States by employees who were not recruited within the United States).

(a) General.

(1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental handicap. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as--

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion or transfer;
- (iv) Recruitment;
- (v) Advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings.

(1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped individuals and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor (Director), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified physically and mentally handicapped individuals.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$2,500 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Director to enforce the terms, including action for noncompliance. #

32. CLEAN AIR AND WATER (1984 APR) FAR 52.223-2

(a) "Air Act," as used in this clause, means the Clean Air Act (42 U.S.C. 7401 et seq.).

"Clean air standards," as used in this clause, means--

(1) Any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, work practices, or other requirements contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738;

(2) An applicable implementation plan as described in section 110(d) of the Air Act (42 U.S.C. 7410(d));

(3) An approved implementation procedure or plan under section 111(c) or section 111(d) of the Air Act (42 U.S.C. 7411(c) or (d)); or

(4) An approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 7412(d)).

"Clean water standards," as used in this clause, means any enforceable limitation, control, condition, prohibition, standard, or other requirement promulgated under the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program, as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317).

"Compliance," as used in this clause, means compliance with--

(1) Clean air or water standards; or

(2) A schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control agency under the requirements of the Air Act or Water Act and related regulations.

"Facility," as used in this clause, means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Contractor or subcontractor, used in the performance of a contract or subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.

"Water Act," as used in this clause, means Clean Water Act (33 U.S.C. 1251 et seq.).

(b) (1) To comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, and all regulations and guidelines issued to implement those acts before the award of this contract;

(2) That no portion of the work required by this prime contract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this contract was awarded unless and until the EPA eliminates the name of the facility from the listing;

(3) To use best efforts to comply with clean air standards and clean water standards at the facility in which the contract is being performed; and

(4) To insert the substance of this clause into any nonexempt subcontract, including this subparagraph (b)(4).#

33. BUY AMERICAN ACT--CONSTRUCTION MATERIALS (1984 APR)

FAR 52.225-5

(a) The Buy American Act (41 U.S.C. 10) provides that the Government give preference to domestic construction material.

"Components," as used in this clause, means those articles, materials, and supplies incorporated directly into construction materials.

"Construction materials," as used in this clause, means articles, materials, and supplies brought to the construction site for incorporation into the building or work.

"Domestic construction material," as used in this clause, means (1) an unmanufactured construction material mined or produced in the United States, or (2) a construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as the construction materials determined to be unavailable pursuant to subparagraph 25.202(a)(3) of the Federal Acquisition Regulation (FAR) shall be treated as domestic.

(b) The Contractor agrees that only domestic construction material will be used by the Contractor, subcontractors, materialmen, and suppliers in the performance of this contract, except for foreign construction materials, if any, listed in this contract.

(The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954, as amended, and Subpart 25.2 of the FAR).#

34. AUTHORIZATION AND CONSENT (APR 1984) FAR 52.227-1

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed \$25,000; however, omission of this clause from any subcontract, under or over \$25,000, does not affect this authorization and consent. #

35. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (APR 1984) FAR 52.227-2

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).#

36. PATENT INDEMNITY-CONSTRUCTION CONTRACTS (APR 1984) FAR 52.227-4

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract. #

37. ADDITIONAL BOND SECURITY (1984 APR) FAR 52.228-2

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond furnished with this contract becomes unacceptable to the Government;

(b) Any surety fails to furnish reports on its financial condition as required by the Government; or

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer. #

38. INSURANCE--WORK ON A GOVERNMENT INSTALLATION (1984 APR) FAR 52.228-5

(The following clause is applicable if the services involved are performed on a 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 Schedule or elsewhere in the contract.

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

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. At least 5 days before entry of each such subcontractor's personnel on the Government installation, the Contractor shall furnish (or ensure that there has been furnished) to the Contracting Officer a current certificate of insurance, meeting the requirements of paragraph (b) above, for each such subcontractor. #

39. FEDERAL, STATE, AND LOCAL TAXES (1984 APR) FAR 52.229-3

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of 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 \$100.

(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. #

40. PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS

(1984 APR) FAR 52.232-5

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

(b) The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, in such detail as requested, to provide a basis for determining progress payments. In the preparation of estimates the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site may also be taken into consideration if--

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

(2) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) In making these progress payments, there shall be retained 10 percent of the estimated amount until final completion and acceptance of the contract work. However, 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 may authorize payment to be made in full without retention of a percentage. When the work is substantially complete, the Contracting Officer shall retain an amount that the Contracting Officer considers adequate protection of the Government and may release to the Contractor all or a portion of any excess amount. 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 may be made for the completed work without retention of a percentage.

(d) 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.

(e) The Government shall, upon request, reimburse the Contractor for the entire amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after furnishing evidence of full payment to the surety.

(f) 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. 203 and 41 U.S.C. 15).#

41. INTEREST (APR 1984) FAR 52.232-17

(a) Notwithstanding any other clause of this contract, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

- (1) The date fixed under this contract.
- (2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract. #

42. ASSIGNMENT OF CLAIMS (1984 APR) FAR 52.232-23

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 203, 41 U.S.C. 15 (hereafter referenced to as the "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. #

43. DISPUTES (1984 APR) FAR 52.233-1

(a) This contract is subject to the Contract Disputes Act of 1978 (41 U.S.C. 601-613)(the Act).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$50,000 is not a claim under the Act until certified as required by subparagraph (d)(2) below. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d) (1) A claim by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) For Contractor claims exceeding \$50,000, the Contractor shall submit with the claim a certification that--

- (1) The claim is made in good faith;
 - (ii) Supporting data are accurate' and complete to the best of the Contractor's knowledge and belief; and
 - (iii) The amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable.
- (3) (1) If the Contractor is an individual, the certification shall be executed by that individual.
- (ii) If the Contractor is not an individual, the certification shall be executed by--
- (A) A senior company official in charge at the Contractor's plant or location involved; or
 - (B) An officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

47. SUPERINTENDENCE BY THE CONTRACTOR (1984 APR) FAR 52.236-6

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor. #

48. PERMITS AND RESPONSIBILITIES (1984 APR) FAR 52.236-7

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, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract. #

49. OTHER CONTRACTS (1984 APR) FAR 52.236-8

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 action that will interfere with the performance of work by any other contractor or by Government employees. #

50. PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (1984 APR) FAR 52.236-9

(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. #

51. OPERATIONS AND STORAGE AREAS (1984 APR) FAR 52.236-10

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads. #

52. USE AND POSSESSION PRIOR TO COMPLETION (1984 APR) FAR 52.236-11

(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. #

53. CLEANING UP (1984 APR) FAR 52.236-12

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. #

(e) For Contractor claims of \$50,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$50,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (properly certified if required), or (2) the date payment otherwise would be due, if that date is later, until the date of payment. 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.

(h) 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. #

44. DIFFERING SITE CONDITIONS (1984 APR) FAR 52.236-2

(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 inherent 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. #

45. SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (1984 APR) FAR 52.236-3

(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. #

46. MATERIAL AND WORKMANSHIP (APR 1984) FAR 52.236-5

(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. #

54. ACCIDENT PREVENTION (ALTERNATE I) (1984 APR) FAR 52.236-13

(a) In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoiding work interruptions. For these purposes, 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 this purpose are taken.

(b) If this contract is with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, dated April 1981, as revised.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. The Contractor shall report this data in the manner prescribed by the Contracting Officer.

(d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required.

After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, 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 base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with this clause.

(f) Before commencing the work, the Contractor shall--

(1) Submit a written proposal for implementing this clause; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program. #

55. SCHEDULE FOR CONSTRUCTION CONTRACTS (1984 APR) FAR 52.236-15

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the

Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract. #

56. SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (1984 APR)

FAR 52.236-21

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place", that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(h) This clause shall be included in all subcontracts at any tier. #

57. CHANGES (1984 APR) FAR 52.243-4

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) In the Government-furnished facilities, equipment, materials, services, or site; or

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

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances, and source of the order and (2) that the Contractor regards the order as a change order.

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

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a "proposal for adjustment" (hereafter referred to as proposal) based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed 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 submit any proposal under this clause within 30 days after (1) receipt of a written change order under paragraph (a) above or (2) the furnishing of a written notice under paragraph (b) above, 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.†

58. SUBCONTRACTS UNDER FIXED-PRICE CONTRACTS (1984 APR)

FAR 52.244-1

(The following clause is applicable if this contract is in excess of \$500,000.)

(a) This clause does not apply to firm-fixed-price contracts and fixed-price contracts with economic price adjustment. However, it does apply to subcontracts resulting from unpriced modifications to such contracts.

(b) "Subcontract," as used in this clause, includes but is not limited to purchase orders, and changes and modifications to purchase orders. The Contractor shall notify the Contracting Officer reasonably in advance of entering into any subcontract if the Contractor does not have an approved purchasing system and if the subcontract--

(1) Is to be a cost-reimbursement, time-and-materials, or labor-hour contract estimated to exceed \$25,000 including any fee;

(2) Is proposed to exceed \$100,000; or

(3) Is one of a number of subcontracts with a single subcontractor, under this contract, for the same or related supplies or services, that in the aggregate are expected to exceed \$100,000.

(c) The advance notification required by paragraph (b) above shall include--

- (1) A description of the supplies or services to be subcontracted;
 - (2) Identification of the type of subcontract to be used;
 - (3) Identification of the proposed subcontractor and an explanation of why and how the proposed subcontractor was selected, including the competition obtained;
 - (4) The proposed subcontract price and the Contractor's cost or price analysis;
 - (5) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions;
 - (6) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract; and
 - (7) A negotiation memorandum reflecting--
 - (i) The principal elements of the subcontract price negotiations;
 - (ii) The most significant considerations controlling establishment of initial or revised prices;
 - (iii) The reason cost or pricing data were or were not required;
 - (iv) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;
 - (v) The extent, if any, to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and subcontractor; and the effect of any such defective data on the total price negotiated;
 - (vi) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and
 - (vii) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.
- (d) The Contractor shall obtain the Contracting Officer's written consent before placing any subcontract for which advance notification is required under paragraph (b) above. However, the Contracting Officer may ratify in writing any such subcontract. Ratification shall constitute the consent of the Contracting Officer.
- (e) Even if the Contractor's purchasing system has been approved, the Contractor shall obtain the Contracting Officer's written consent before placing subcontracts that have been selected for special surveillance and so identified in the Schedule of this contract.
- (f) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall

constitute a determination (1) of the acceptability of any subcontract terms or conditions, (2) of the acceptability of any subcontract price or of any amount paid under any subcontract, or (3) to relieve the Contractor of any responsibility for performing this contract.

(g) No subcontract placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement subcontracts shall not exceed the fee limitations in subsection 16.301-4 of the Federal Acquisition Regulation (FAR).

(h) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.#

59.1 PROPERTY RECORDS (APR 1984) FAR 52.245-1

The Government shall maintain the Government's official property records in connection with Government property under this contract. The Government Property clause is hereby modified by deleting the requirement for the Contractor to maintain such records.

59.2 GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (1984 APR) FAR 52.245-2

(The following clause is applicable when Government Property having an acquisition cost in excess of \$50,000 is furnished to or acquired by the Contractor.)

(a) Government-furnished property.

(1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as-is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall, upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice, (i) decrease the Government-furnished property provided or to be provided under this contract, or (ii) substitute other Government-furnished property for the property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any--

- (1) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or
- (ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property.

(1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities, special test equipment, and special tooling (other than that subject to a special tooling clause) acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract--

- (i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and
- (ii) Title to all other material shall pass to and vest in the Government upon--
 - (A) Issuance of the material for use in contract performance;
 - (B) Commencement of processing of the material or its use in contract performance; or
 - (C) Reimbursement of the cost of the material by the Government, whichever occurs first.

(d) **Use of Government property.** The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property administration.

(1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) **Access.** The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) **Risk of loss.** Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) **Equitable adjustment.** When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for--

(1) Any delay in delivery of Government-furnished property;

(2) Delivery of Government-furnished property in a condition not suitable for its intended use;

(3) A decrease in or substitution of Government-furnished property; or

(4) Failure to repair or replace Government property for which the Government is responsible.

(i) **Final accounting and disposition of Government property.** Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this contract or delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as the Contracting Officer directs.

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. #

61. VALUE ENGINEERING - CONSTRUCTION (1984 APR) FAR 52.248-3

(The following clause is applicable if this contract is in excess of \$100,000.)

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

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

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

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

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

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

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

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

- (i) In deliverable end item quantities only; or
- (ii) To the contract type only.

(c) **VECP preparation.** As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) **Submission.** The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) **Government action.**

(1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in action upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a

(j) **Abandonment and restoration of Contractor's premises.** Unless otherwise provided herein, the Government--

(1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and

(2) Has no obligation to restore or rehabilitate the Contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) **Communications.** All communications under this clause shall be in writing.

(l) **Overseas contracts.** If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished", respectively. #

59.3 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (1984 APR)

FAR 52.245-4

(The following clause is applicable when Government Property having an acquisition cost of \$50,000 or less is furnished to or acquired by the Contractor.)

(a) The Government shall deliver to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changes clause when--

(1) The Contractor submits a timely written request for an equitable adjustment; and

(2) The facts warrant an equitable adjustment.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1, Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

(1) For reasonable wear and tear;

(2) To the extent property is consumed in performing this contract; or

(3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the

Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished", respectively. #

60. INSPECTION OF CONSTRUCTION (1984 APR) FAR 52.246-12

(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 inspection as will ensure that the work called for by this 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) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary

notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The Contracting Officer's decision to accept or reject all or part of any VECP shall be final and not subject to the Disputes clause or otherwise subject to litigation under the Contract Disputes Act of 1978 (41 U.S.C. 601-613).

(f) **Sharing.**

(1) **Rates.** The Contractor's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 55 percent for fixed-price contracts or (ii) 25 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 under subparagraph (1) above to the contract price or fee.

(g) **Collateral savings.** If a VECP is accepted, the instant contract amount shall be increased 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 shall not exceed (1) the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or (2) \$100,000, whichever is greater. The Contracting Officer shall be the sole determiner of the amount of collateral savings, and that amount shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

(h) **Subcontracts.** The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; **provided**, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

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

**62. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE)
(SHORT FORM) (1984 APR) FAR 52.249-1**

(The following clause is applicable if this contract is not in excess of \$100,000.)

The Contracting Officer, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the rights, duties, and obligations of the parties, including compensation to the Contractor, shall be in accordance with Part 49 of the Federal Acquisition Regulation in effect on the date of this contract.#

**63. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE)
(ALTERNATE I) (1984 APR) FAR 52.249-2**

(The following clause is applicable if this contract is in excess of \$100,000.)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (6) above; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(d) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(e) Subject to paragraph (d) above, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (e) or paragraph (f) below, exclusive of costs shown in subparagraph (f)(3) below, may not exceed the total contract price as reduced by (a) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount.

Paragraph (f) below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

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

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

- (i) The cost of this work;
- (ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (i) above; and
- (iii) A sum, as profit on (i) above, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

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

- (i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
- (ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and
- (iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(g) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (f) above, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(h) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(i) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (d), (f), or (k), except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (d) or (k), and failed to request a time extension, there is no right of appeal. If the Contracting Officer has made a determination of the amount due under paragraph (d), (f), or (k), the

Government shall pay the Contractor (1) the amount determined by the Contracting Officer if there is no right of appeal or if no timely appeal has been taken, or (2) the amount finally determined on an appeal.

(j) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(k) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(1) (1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(m) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents. #

64. DEFAULT (FIXED-PRICE CONSTRUCTION) (1984 APR) FAR 52.249-10

(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. #

65. AUTHORIZED DEVIATIONS IN CLAUSES (1984 APR) FAR 52.252-6

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

66. COMPOSITION OF CONTRACTOR (JAN 1965) FAR SUPP 52.236-7000

If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder. #

67. MODIFICATION OF PROPOSALS - PRICE BREAKDOWN (APR 1968) FAR SUPP 52.236-7001

The Contractor, in connection with any proposal he makes for a contract modification, shall furnish a price breakdown, itemized as required by the Contracting Officer. Unless otherwise directed, the

breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract, and overhead costs, as well as profit, and shall cover all work involved in the modification, whether such work was deleted, added or changed. Any amount claimed for subcontracts shall be supported by a similar price breakdown. In addition, if the proposal includes a time extension, a justification therefore shall also be furnished. The proposal, together with the price breakdown and time extension justification, shall be furnished by the date specified by the Contracting Officer. #

68. SHOP DRAWINGS (OCT 1976) (FAR SUPP 52.236-7003)

(a) The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain detail specific portions of the work required by the contract.

(b) If this contract requires shop drawings, the Contractor shall coordinate all such drawings and review them for accuracy, completeness, and compliance with contract requirements and shall indicate his approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate his approval or disapproval of the shop drawings and if not approved as submitted shall indicate his reason therefor. Any work done prior to such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (c) below.

(c) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation(s), he shall issue an appropriate contract modification, except that, if the variation is minor and does not involve a change in price or in time of performance, a modification need not be issued.

(d) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated herein) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated herein) of all shop drawings will be retained by the Contracting Officer and one set will be returned to the Contractor.

69. CONTRACT PRICES - BIDDING SCHEDULES (1968 APR)
DFARS 52.236-7004

Payment for the various items listed in the Bidding Schedule shall constitute full compensation for furnishing all plant, labor, equipment, appliances, and materials, and for performing all operations required to complete the work in conformity with the drawings and specifications. All costs for work not specifically mentioned in the Bidding Schedule shall be included in the contract prices for the items listed. #

70. CERTIFICATION OF REQUESTS FOR ADJUSTMENT OR RELIEF EXCEEDING \$100,000 (FEB 1980) FAR SUPP 52.233-7000

(The following clause is applicable if this contract is expected to exceed \$100,000 and the procurement instrument identification number is prefixed by the letters "DACA.")

(a) Any contract claim, request for equitable adjustment to contract terms, request for relief under Public Law 85-804, or other similar request exceeding \$100,000 shall bear, at the time of submission, the following certification given by a senior company official in charge at the plant or location involved:

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; and that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable.

(Official's Name)

(Title)

(b) The certification in paragraph (a) requires full disclosure of all relevant facts, including cost and pricing data.

(c) The certification requirement in paragraph (a) does not apply to:

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

(2) final adjustments under incentive provisions of contracts.

(d) In those situations where no claim certification for the purposes of Section 813 has been submitted prior to the inception of a contract dispute, a single certification, using the language prescribed by the Contract Disputes Act but signed by a senior company official in charge at the plant or location involved, will be deemed to comply with both statutes. #

71. PRICING OF ADJUSTMENTS (1984 APR) DFARS 52.243-7001

When costs are a factor in any determination of a contract price adjustment pursuant to the Changes clause or any other clause of this contract, such costs shall be in accordance with Part 31 of the Federal Acquisition Regulation and the DoD FAR Supplement in effect on the date of this contract. #

SUPERSEDEAS DECISION

Page 1 of 3

STATE: Texas

COUNTIES: Statewide

DECISION NO.: TX84-4104

DATE: Date of Publication 30 Nov 84

Supersedes Decision No. TX84-4007, dated February 17, 1984, in 49 FR 6215.

ZONE 12 - Bowie, Camp, Cass, Delta, Fannin, Franklin, Gregg, Harrison, Hopkins, Hunt, Kaufman, Lamar, Marion, Morris, Rains, Red River, Rusk, Smith, Titus, Upshur, Van Zandt & Wood Counties

DESCRIPTION OF WORK: Heavy (excluding tunnels & dams) and Highway Projects (does not include building structures in rest area projects)

(Includes Mod 1)

	ZONE 12
	Basic Hourly Rates
Air Tool Operator	-
Asphalt Heater Operator	6.95
Asphalt Raker	7.10
Asphalt Shoveler	-
Batching Plant Scale Operator	7.50
Carpenter	7.15
Carpenter Helper	5.70
Concrete Finisher (Paving)	7.35
Concrete Finisher Helper (Paving)	-
Concrete Finisher (Structures)	6.95
Concrete Finisher Helper (Structures)	6.15
Concrete Rubber	-
Electrician	-
Electrician Helper	-
Form Builder (Structures)	6.45
Form Builder Helper (Structures)	-
Form Liner (Paving & Curb)	7.75
Form Setter (Paving & Curb)	7.10
Form Setter Helper (Paving & Curb)	6.35
Form Setter (Structures)	7.30
Form Setter Helper (Structures)	5.80
Laborer, Common	5.10
Laborer, Utility	6.05
Manhole Builder, Brick	-
Mechanic	7.80
Mechanic Helper	5.80
Oiler	6.90
Servicer	6.25
Painter (Structures)	-
Piledriver Person	-
Pipelayer	6.40
Pipelayer Helper	5.50
Pneumatic Mortar Operator	-
Blaster	-
Blaster Helper	-
Reinforcing Steel Setter (Paving)	6.00
Reinforcing Steel Setter (Structures)	7.25
Reinforcing Steel Setter Helper	5.10
Steel Worker (Structural)	-
Steel Worker Helper (Structural)	-
Sign Erector	6.25

	ZONE 12
	Basic Hourly Rates
Spreader Box Man	\$ -
Swamper	-
Power Equipment Operators:	
Asphalt Distributor	7.15
Asphalt Paving Machine	7.25
Broom or Sweeper Operator	5.50
Bulldozer 150 HP & Less	6.80
Bulldozer over 150 HP	7.15
Concrete Paving Curing Machine	-
Concrete Paving Finishing Machine	-
Concrete Paving Form Grader	-
Concrete Paving Grinder	-
Concrete Paving Joint Sealer	-
Concrete Paving Longitudinal Float	-
Concrete Paving Mixer	-
Concrete Paving Saw	7.00
Concrete Paving Spreader	-
Paving Sub Grader	-
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel (Less than 1 1/2 CY)	7.05
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel (1 1/2 CY & Over)	8.50
Crusher or Screening Plant Op.	-
Elevating Grader	-
Form Loader	-
Foundation Drill Operator (Crawler Mounted)	-
Foundation Drill Operator (Truck Mounted)	10.00
Foundation Drill Operator Helper	7.00
Front End Loader (2 1/2 CY & Less)	6.85
Front End Loader (Over 2 1/2 CY)	8.20
Mixer (Over 16 CF)	-
Mixer (16 CF & Less)	-
Motor Grader Operator, Fine Grade	8.70
Motor Grader Operator	7.55
Roller, Steel Wheel (Plant-Mix Pavement)	6.40
Roller, Steel Wheel (Other-Flat Wheel or Tamping)	6.30
Roller, Pneumatic (Self-Propelled)	6.10
Scrapers (17 CY & Less)	6.45
Scrapers (Over 17 CY)	6.90
Self Propelled Hammer	-

	ZONE 12
	Basic Hourly Rates
Side Boom	5.10
Tractor (Crawler Type) 150 HP & Less	6.15
Tractor (Crawler Type) Over 150 HP	7.05
Tractor (Pneumatic) 80 HP & Less	5.10
Tractor (Pneumatic) Over 80 HP	-
Traveling Mixer	5.75
Trenching Machine, Light	-
Trenching Machine, Heavy	-
Wagon Drill, Boring Machine or Post Hole Driller Operator	-
Truck Drivers:	
Single Axle, Light	5.85
Single Axle, Heavy	6.70
Tandem Axle or Semi-trailer	6.70
Lowboy-Float	7.00
Transit-Mix	-
Winch	7.00
Vibrator Operator (Hand Type)	-
Welder	-
Welder Helper	-
Unlisted classifications needed for work not included within the scope of the classifications listed may be added only as provided in the labor standards contract clauses (29 CFR, 5.5(a)(1)(11)).	

PART I

SPECIAL CONTRACT CLAUSES

1. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984)(FAR 52.212-3)

(a) 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, unless otherwise noted, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than the dates or number of calendar days after the date of receipt by him of notice to proceed set forth in the schedule below, except turfing and final as-built drawings, which will be accomplished as specified below:

SCHEDULE

Item of Work	Commencement of Work (calendar days)	Completion of Work (calendar days)	Liquidated Damages per calendar day
(1) Remove and Dispose of Sludge and Contaminated Soil	-	30	\$460.00
(2) Perform all other work	Upon completion of Work Item (1)	120 calendar days after receipt of Work Site	\$460.00
(3) Establishment of turf	*	*	\$ 60.00
(4) Final As-Built drawings	**	**	\$ 60.00

NOTE: Liquidated damages are not accumulative; a maximum of \$460.00 per day will be assessed.

*Establishment of turf. The planting season for turfing work shall be from 1 April to 1 June; planting shall be accomplished during the first planting season, or portion thereof (but not less than 15 days), following substantial completion of building construction. Maintenance of turfing work shall commence immediately after completion of initial watering and shall continue for a period of not less than 60 calendar days. Refertilizing shall commence not earlier than 5 weeks after commencement of maintenance and shall be completed not later than 3 days after commencement. No payment will be made for Establishment of Turf until all requirements of SECTION: ESTABLISHMENT OF TURF are adequately performed and accepted, as determined by the Contracting Officer.

** The Contractor shall commence work on final as-built drawings upon his receipt of the approved preliminary as-built drawings and the reproducible original contract drawings. The Contractor shall have 30

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calendar days to complete and return to the Contracting Officer all specified final as-built drawing work. Upon satisfactory completion of this work the Contractor shall have earned \$2,400.00 of the total contract amount.

(b) The time stated for completion shall include final cleanup of the premises.

(c) The times stated for completion do not include testing of heating and air-conditioning systems, for which a different completion time is specified in the technical provisions. (SWFPS)

(d) The Contractor shall coordinate all requests for utility outages or street closings with the Contracting Officer in writing 14 days prior to date of requested outage.

(1) Utility Outages:

a. Potable water, gas, steam, and sewer do not exist on this site. Fire fighting water lines do occur and shall not be interrupted.

b. Electrical outages shall have a maximum duration of 4 hours.

(2) Street Closings:

a. One lane traffic shall be maintained at all times (except that a total closing may be allowed for specific 8-hour periods).

b. The final street repair shall be completed within 14 days after the start of any street crossing. Any part of the street returned to service prior to final repair shall be maintained smooth with hot-mix cold-lay surface course.

(e) Security Requirements: See Technical Provisions SECTION 1H.

(f) Special Work Restrictions:

(1) The Contractor shall provide his own drinking and decontamination showering water.

(2) The Contractor will not be permitted to enter or exit the base during the hours of 7:00 a.m. - 7:30 a.m. nor 4:00 p.m. - 4:30 p.m.

(3) The Contractor shall check with either the Plant Area Foreman or the Guard Sergeant at the end of each work day when the last of the Contractor's personnel leaves. This is necessary in order to verify that all Contractor's personnel have vacated the plant site for reasons of safety. This shall either be carried out by the Contractor's Project Site Supervisor, or by his duly authorized representative.

(g) Construction Activity Near Burning Pans and Cage:

(1) The burning pans and cage will be marked out with a rope installed by the base authorities. The Contractor shall not enter this roped-off area during burning periods and shall not enter during other periods unless specifically authorized by the Contracting Officer's Authorized Representative.

(2) The burning schedule varies daily between 10:00 a.m. and 2:30 p.m. The burning duration lasting from 45 minutes to two hours. During burning periods the roped-off area will enlarge to include the access road leading to the burning grounds.

NOTE: A map is attached showing access routes and burning areas.

(h) Waste Disposal:

(1) Longhorn AAP must comply with regulatory requirements of the County, State, and Federal Government agencies for control of all waste material, with particular emphasis on hazardous waste as regulated under the U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA). For the purpose of waste management at Longhorn AAP all waste generated by the work of this project will be identified and segregated as to disposal site.

a. Instructions for handling construction type wastes which have been previously identified (classification, segregation, packaging, tagging, arrangements for disposal, transporting to the disposal site and any special precautions) will be furnished to the Corps of Engineers and construction Contractor during the preconstruction conference.

b. The construction Contractor shall review the contract requirements and furnish, Facilities Projects, in writing, a list of any additional materials which are expected to be generated as wastes.

c. Disposal instructions will be determined, for these additional materials, and forwarded through the Corps of Engineers to the construction Contractor.

d. During the course of construction, additional waste materials are likely to be generated, which have not been previously identified. These materials will be handled as outlined above.

e. Construction Contractors shall assure that wastes are properly segregated, packaged and tagged prior to delivery to storage/disposal sites.

f. Construction Contractors shall schedule delivery of wastes to the storage/disposal location. Normal operating schedules with name and telephone number of individuals to contact will be furnished at the preconstruction conference. Special scheduling arrangements may be established when normal schedules are not satisfactory.

g. Wastes transported to the storage/disposal site which are not properly segregated, packaged or tagged shall not be accepted.

2. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (APR 1984)(DAEN-ECC-Q)

(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)." The listing below defines the monthly anticipated adverse weather for the contract period and is based upon NOAA or similar data for the geographic location of the project.

MONTHLY ANTICIPATED ADVERSE WEATHER CALENDAR DAYS

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(11)	(11)	(8)	(9)	(7)	(6)	(5)	(4)	(4)	(4)	(6)	(9)

(b)(1) The above schedule of anticipated adverse weather will constitute the base line for monthly (or portion thereof) weather time evaluations. Upon acknowledgement of the notice to proceed and continuing throughout the contract on a monthly basis, actual adverse weather days will be recorded on a calendar day basis (include weekends and holidays) and compared to the monthly anticipated adverse weather in subparagraph (a) above. For purposes of subparagraph (b), the term actual adverse weather days shall include days impacted by actual adverse weather days.

(2) The number of actual adverse weather days shall be calculated chronologically from the first to the last day in each month. Once the number of actual adverse weather days anticipated in subparagraph (a) above have been incurred, the Contracting Officer will examine any subsequently occurring adverse weather days to determine whether a Contractor is entitled to a time extension. These subsequently occurring adverse weather days must prevent work for 50 percent or more of the Contractor's work day and delay work critical to the timely completion of the project. The Contracting Officer will convert any delays meeting the above requirements to calendar days and issue a modification in accordance with the Contract Clause entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)."

(c) The Contractor's schedule must reflect the above anticipated adverse weather delays on all weather dependent activities.

3. PRECONSTRUCTION CONFERENCE

Approximately one week after award of the construction contract and prior to the start of any construction work an authorized representative of the Contracting Officer will schedule and conduct a preconstruction conference. The Contractor's Project Manager, Superintendent and his Quality Control Manager will attend this meeting. The Contractor is encouraged to have an officer of his company and representation from his sub-contractors at this conference. This conference will be held at the location specified by the Contracting Officer's authorized representative.

(a) The purpose of this preconstruction conference is to enable the Contracting Officer's representative to outline the procedures that will be followed by the Government in its administration of the construction

contract and to discuss the performance that will be expected from the Contractor. This conference will allow the Contractor an opportunity to ask questions about the Government's supervision and inspection of contract work, about security requirements, regulations, etc. The Contracting Officer's authorized representative may invite using service engineering and security personnel and any other Government personnel to attend this conference.

(b) The following is a list of items for discussion during this conference. This is not considered to be a complete listing.

(1) Authority of the Area/Resident Engineer and organization of the Area/Resident office.

(2) Contractor's Safety Program.

(3) Contractor's Quality Control Plan.

(4) Contractor's Environmental Protection Plan.

NOTE: The Contractor will submit the plans for items (2), (3), and (4) prior to the preconstruction conference.

(5) Contractor's Progress Schedule: The Contractor will bring a preliminary bar chart to the preconstruction conference for discussion.

(6) Correspondence Procedures.

(7) Contractor Labor Standards Provisions.

(8) Contractor Plan of Operations.

(9) Contract Modifications and Administrative Procedures.

(10) Contractor's Job Layout and Storage Area.

(11) Procedures for Processing Shop Drawings.

(12) Payment Estimate Data and Procedures.

(13) Contractor Utilities.

(14) Security Requirements, and Other Base Regulations, if applicable.

(15) Government Furnished Equipment, if applicable.

(16) Disposition of Salvage Property.

(17) Contractor Insurance Requirements.

(18) Value Engineering Program.

- (19) Contractor Performance Evaluation.
- (20) Preliminary As-Built Drawings.
- (21) Final As-Built Drawings.
\$2,400.00 payment when approved.
- (22) O & M Manuals, Spare Parts Data, Spare Parts, Inventory of Installed Property, and Special Tools.
- (23) Single Point of Contact and Bond for Warranty of Construction.

(c) If the Contractor has submitted his Accident Prevention (Safety) Plan, Quality Control Plan, and Environmental Protection Plan for review prior to this meeting, these may be approved in toto or approved with comments at the conference. Construction work will not proceed until after this meeting has been held, these three plans noted above as items (2), (3), and (4) have been approved and the Notice to Proceed has been received and acknowledged by the Contractor.

4. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS (1965 JAN)(FAR SUPP 52.236-7002)

(a) Two (2) sets of full-size contract drawings and maps (one blue-line and one reproducible), five (5) sets of half-size contract drawings and maps, and ten (10) sets of contract specifications will be furnished the Contractor without charge except applicable publications incorporated into the technical provisions by reference. One set of full-size reproducible drawings and one set of half-size prints will be furnished with each final modification. Additional sets will be furnished on request at the cost of reproduction. The work shall conform to the following contract drawings and maps, all of which form a part of these specifications and are available in the office of the Corps of Engineers, Department of the Army, at 819 Taylor, Fort Worth, Texas.

CONTRACT DRAWINGS

CLOSURE OF UNLINED EVAPORATION POND

PHASE II

LONGHORN ARMY AMMUNITION PLANT

Sequence	:	:	:
No.	:	Title	: Drawing No. : Sheet No.

The list of drawings and maps set out in the index on the drawings is hereby incorporated by reference into these specifications.

Schedules included in the drawings are for the purpose of defining requirements other than quantities.

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

(c) The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

5. REQUIRED INSURANCE (FAR 28.307-2)

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance.

(1) Workmen's compensation and employers' liability insurance in compliance with applicable state statutes, with a minimum employers' liability coverage of \$100,000.

(2) Comprehensive general liability insurance for bodily injury in the minimum limits of \$500,000 per occurrence. No property damage liability insurance is required.

(3) Comprehensive automobile liability insurance covering the operation of all automobiles used in connection with the performance of the contract in the minimum limits of \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage. (See Contract Clause entitled Insurance--Work on a Government Installation)

6. PERFORMANCE OF WORK BY CONTRACTOR (APR 1984)(FAR 52.236-1)

The Contractor shall perform on the site, and with his own organization, work equivalent to at least twenty-five percent (25%) 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.

7. LIQUIDATED DAMAGES - CONSTRUCTION (APR 1984)(FAR 52.212-5)

(a) In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as liquidated damages, the sums for each day of delay as set forth in the Schedule in Paragraph 1(a) above.

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

8. SHOP DRAWINGS (SWFCD)

(a) Shop drawings shall be submitted in accordance with the procedures listed below and in the Technical Provisions Section titled Contractor Quality Control System.

(b) The following classifications of shop drawings are designated Category I and will be given priority in review; 1 set will be returned to the Contractor, with approval (or disapproval) action indicated.

(1) Extensions of design such as (a) structural steel members and connections not shown on the drawings, (b) steel joists other than standard J-, H-, LJ-, and LH-series, and (c) any items for which the drawings or specifications require submittal of design calculations.

(2) Deviations and/or departures from the contract drawings when deemed necessary by the Contractor.

(c) Shop drawings other than those in (b) above are designated Category II and will receive a cursory review, only, and may be subject to further review at any time during the course of the contract. One set will be returned to the Contractor with approval (or disapproval) action indicated. No adjustment for time or money will be allowed for corrections required as a result of non-compliance with contract plans and/or specifications.

(d) The Contractor shall certify that each submittal is correct and in strict conformance with the contract drawings and specifications. All proposed deviations requested by the Contractor shall be noted on the transmittal form ENG Form 4025. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the shop drawing. If these requirements are not met, the submittal shall be returned to the Contractor for corrective action. (ER 415-1-10)

(e) The Contractor shall furnish one reproducible, unfolded copy of all wiring and control diagrams and approved system layout drawings with the operating instructions called for under the various headings of these specifications for mechanical and electrical systems.

9. PHYSICAL DATA (APR 1984)(FAR 52.236-4)

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.

The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys and borings. (See Boring Logs attached as Appendix A).

10. SALVAGE MATERIALS AND EQUIPMENT (1965 JAN)(FAR SUPP 52.236-7005)

The Contractor shall maintain adequate property control records for all materials or equipment specified to be salvaged. These records may be in accordance with the Contractor's system of property control, if approved by the property administrator. The Contractor shall be responsible for the adequate storage and protection of all salvaged materials and equipment and shall replace, at no cost to the Government, all salvage materials and equipment which are broken or damaged during salvage operations as the result of his negligence, or while in his care.

11. LAYOUT OF WORK (1965 APR OCE)(EFARS 52.2/9108(a & b))

(a) The Government has established bench marks and horizontal control points at the site of the work. These are described and indicated on contract drawings.

(b) From these control points the Contractor shall lay out the work by establishing all lines and grades at the site necessary to control the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the

specifications or on the contract drawings. The Contractor shall established and maintain at the site of the work as a minimum requisite the following horizontal and vertical controls:

None other than those established by the Government.

The above are minimum requirements and the Contractor shall place and establish such additional stakes and markers as may be necessary for control and guidance of his constuction operations. All survey data shall be recorded in accordance with standard and approved methods. All field notes, sketches recordings and computations made by the Contractor in establishing above horizontal and vertical control points shall be available at all times during the progress of the work for ready examination by the Contracting Officer or his duly authorized representative.

(c) The Contractor shall furnish, at his own expense, all such stakes spikes, steel pins, templates, platforms, equipment, tools and material and all labor as may be required in laying out any part of the work from the control points established by the Government. It shall be the responsibility of the Contractor to maintain and preserve all stakes and other markers established by him until authorized to remove them. If any of the control points established at the site by the Government are destroyed by or through the negligence of the Contractor prior to their authorized removal they may be replaced by the Contracting Officer, and the expense of replacement will be deducted from any amount due or which may become due the Contractor. The Contracting Officer may require that work be suspended at any time when horizontal and vertical control points established at the site by the Contractor are not reasonably adequate to permit checking the work. Such suspension will be withdrawn upon proper replacement of the control points.

12. TIME EXTENSIONS (APR 1984)(FAR 52.212-6)

Notwithstanding any other provisions of this contract it is mutually understood that the time extensions for changes in the work 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 so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule.

13. QUANTITY SURVEYS (APR 1984)(FAR 52.236-16)

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

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

or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.

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

14. CONTRACTOR PROGRESS REPORTING (1984 Sep)

Pursuant to the contract clause entitled "SCHEDULE FOR CONSTRUCTION CONTRACTS" the Contractor shall prepare a schedule of construction utilizing either a construction progress chart or a critical path method (CPM) network analysis system as described herein.

A. CONSTRUCTION PROGRESS CHART

Construction progress charts shall be prepared on ENG Form 2454. The Contractor shall submit three copies of the Construction Progress Chart for approval. No progress payments will be made without an approved progress chart.

The Contractor shall prepare the chart with the following considerations. The contract work shall be divided into definable contract features. As a minimum, the Contractor shall address each specification section as a principle contract feature. The WT. column should indicate the percentage of the contract for which each principle contract feature accounts. The vertical lines shall be identified by specific time frames, (i.e., weekly, bi-weekly, monthly) with one space accounting for no more than one month. The Contractor shall identify the date which Notice to Proceed is acknowledged on the chart. The Contractor shall also identify the contract completion date on the chart.

The Contractor shall place bars on the chart to indicate scheduled progress for each feature of work. The Contractor shall note the anticipated percentage complete for each item at the end of each month and at the end of each scheduled block.

If the project cannot be completely described to the Contracting Officer's complete satisfaction with fifty (50) principle contract features, a Contractor prepared Critical Path Method Network Analysis system will be used in lieu of the Construction Progress Chart.

B. CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM (JAN 1985)(SWFCD)

Pursuant to the Contract Clause entitled "SCHEDULE FOR CONSTRUCTION CONTRACTS," the Contractor shall prepare a schedule of construction which shall be based upon a critical path method (CPM) network analysis system as described below. The network analysis system is required to assure adequate planning and execution of the work and to assist the Contracting Officer in appraising the reasonableness of the proposed schedule and evaluating progress of the work both before and during construction.

(a) The critical path method/arrow diagram method (Adm: I-J Procedure) shall conform in general to the requirements of the Corps of Engineers' regulation ER 1-1-11 entitled "NETWORK ANALYSIS SYSTEM" (NAS), single copies of which are available to bona fide bidders on request. The Adm: I-J Procedure will be used for all mathematical analysis.

(b) The network analysis system shall consist of logic diagrams and accompanying CPM/ADM mathematical analysis. Both the logic diagrams and the CPM/ADM mathematical analysis will be updated periodically during construction to show the impact of progress and changes.

(1) Logic Diagrams

a. Project activities shown on logic diagrams shall include construction activities, the submittal and approval of samples of materials and equipment, fabrication of special material and equipment, and their installation and testing. All activities of the Government which affect progress as well as contract-required milestone activities with completion dates shall also be included. The work represented by each activity will be such that the duration time will range from three (3) to thirty (30) days and will have a dollar value not to exceed \$100,000.00 (except when an activity contains one item of equipment whose value exceeds \$100,000.00). The activities which comprise the separate buildings and/or phases of construction (work items) shall be commonly identifiable by the use of both activity codes and sub-networks. Should the logic diagram exceed 3,000 total activities (including dummies), it shall be structured into independent sub-networks containing not more than 3,000 activities each, subject to the Contracting Officer's approval. Detailed logic diagrams need not be time scaled, but shall be drafted to show a continuous flow of work from left to right with no arrow from right to left. The following information shall be shown on the logic diagrams for each activity: preceding and succeeding event numbers, description of the activity, cost, craft involved (responsibility), work item designation, and activity duration in calendar days. The critical path shall be determined and shall be clearly indicated on the diagram as a continuous series of project activities (with zero total float). Activity event numbers shall be assigned in ascending sequence order so that preceding event numbers are smaller numerically than following event numbers. Activity event numbers shall be assigned by fives: i.e., 5, 10, 15, etc.

b. Logic diagrams shall show the order and interdependence of project activities and the sequence in which the work is to be accomplished, as planned by the Contractor. The logic diagramming procedure which will be used will show how the start of a given activity is dependent on the completion of preceding activities, and how its completion restricts the start of following activities. A preliminary logic diagram defining in detail the Contractor's planned operations during the first ninety (90) calendar days of the project shall be submitted within ten (10) days after notice to proceed. The Contractor's general approach, in nontime-scaled summary, for the balance of the project shall be indicated. Cost of activities expected to be completed or partially completed before submission and approval of the whole schedule shall be included. The Contractor shall submit with the preliminary logic diagram a copy of the user's manual outlining CPM/ADM computer program's mathematical analysis capabilities, details, functions, and operation. Upon approval of the schedule, the Contractor shall provide to the Government a complete input listing of the approved schedule.

Building or FeatureMinimum Number of Activities

Closure of Unlined
Evaporative Pond

200

c. If the project is of such size that the entire logic diagram cannot be readily shown on a single sheet, a summary logic diagram shall be provided. The summary logic diagram shall consist of a minimum of 50 activities and maximum of 150 activities and shall display work item summaries and highlight interdependencies between adjacent work items. Related activities shall be grouped together. The critical path shall be plotted generally along the center of the sheet with channels with increasing float placed towards the top or bottom. The summary logic diagram shall be time scaled using units of approximately one-half inch equals one week or other suitable scale, approved by the Contracting Officer.

d. Sheet size of logic diagrams shall be 30 by 42 inches. Each updated copy shall show a date of the latest revisions.

e. Initial submittal for review purposes shall be submitted in two (2) full size copies. Final approved schedule shall be submitted in ten (10) copies (one reproducible full size, four full size prints, one reproducible half size, and four half size prints). Monthly updates shall be submitted in three (3) full size copies and one (1) half size copy. Revision/additions to logic diagrams shall require submittal of one (1) full size reproducible and one (1) half size reproducible of the relevant logic diagram.

(2) The CPM/ADM mathematical analysis reports shall include a tabulation of each activity shown on the logic diagrams. The following information will be furnished as a minimum for each activity.

- a. Preceding and following event numbers;
- b. an identifier reflecting type of activity (beginning, ending, dummy, milestone);
- c. activity description;
- d. original duration;
- e. responsibility for activity (prime Contractor, each of the subcontractors, suppliers, Government, etc);
- f. the work item for phase of which the activity is a part;
- g. monetary value of activity;
- h. an identifier reflecting update status (started, completed);
- i. remaining duration in actual days remaining to complete the activity; note 4
- j. actual start date (by calendar date);
- k. actual finish date (by calendar date);
- l. percentage of activity completed; Contractor's earnings based on portion of activity completed; note 2
- m. earliest start date (by calendar date); note 3
- n. earliest finish date (by calendar days); note 1
- o. latest start date (by calendar date);
- p. latest finish date (by calendar date);
- q. total slack or total float; and

- r. an identifier reflecting modification activities (dummy activities are not to be identified).

NOTES:

1. Early start date plus remaining duration equals early finish ($ES + RD = EF$). Remaining duration expressed in work days rather than percentage.
2. Quantity survey (percent complete) independent of network time analysis.
3. Show early start date on all scheduled activities not completed.
4. Remaining duration shall not be based upon percentage of remaining work to be earned.

(3) Program Analysis

a. The program used in making the mathematical computation shall compile the total dollar value of completed and partially completed activities by work item (as established in the SPECIAL CONTRACT CLAUSES SCHEDULE), and provide the percentage of actual work in place (by work item). Progress reporting format will be reflected in a work item (phase) summary as follows:

1. Original Contract Dollars
2. Modified Dollars to Date
3. Current contract dollars ($3 = 1 + 2$)
4. Earned dollars (work in place)
5. Actual percent complete ($5 = 4/3 \times 100\%$)
6. Percent scheduled
7. Work item completion dates (as modified to date)

b. The CPM/ADM mathematical analysis shall accept approved modification activity time adjustments, and recompute all scheduled dates and float accordingly.

The Contractor shall indicate in his proposals for all contract modifications by event number, the activities affected, activities added, or activities deleted. The affect shall be indicated for each activity in both time and money. When modifications in the work are found to necessitate issuance of a notice to proceed prior to proposal submission and/or settlement to avoid delay and additional expense, the Contractor shall furnish the Government suggested changes in the logic diagram(s) and/or duration time of all activities affected by the modification within ten (10) calendar days from notice to proceed. In the event the Contractor does not furnish the suggested logic changes or an agreement cannot be reached, the Contracting

Officer's representative will direct the Contractor as to the specific logic changes and/or time adjustments which shall be entered into the CPM/ADM mathematical analysis. Modification activity time adjustments to be used to "Time Track" shall be those issued with a notice to proceed or approved since the last update. Each month, prior to updating, the CPM/ADM mathematical analysis shall apply these modification activity time adjustments to determine revised work item and/or project completion dates due to contract modifications. The results are to be reviewed and verified by the Contracting Officer's representative, after which the update CPM/ADM mathematical analysis shall again be performed, including the current period progress with schedule dates and float recomputed based upon the update data date. This shall reflect the actual status of the project.

The initial "NETWORK ANALYSIS SYSTEM" shall be tested to ensure that it will accurately reflect the effects of time tracking. Testing will be approved by the Contracting Officer's representative prior to the first CPM/ADM mathematical analysis system update. Future major changes in the CPM schedule shall also be tested and approved prior to implementation to ensure proper reflection of the actual status of the project as well as on contract dates due to modification time adjustments.

(4) The CPM/ADM mathematical analysis reports shall list the activities in sorts or groups as follows:

a. Work Item Progress Report. Per Paragraph b(3)(a).

b. I-J Sort. By the preceding event number, from lowest to highest, and then in the order of the following event number. No activities shall be omitted.

c. Work Item ES-TF-I-J Sort. By work item code, by early start date, total float, by the preceding event number, (from lowest to highest), and then in the order of the following numbers. Dummy activities shall be omitted; completed activities shall be included.

d. Total Float (Slack) Sort. By the amount of total float (slack), then in order of preceding event number. Dummy activities and completed activities are included.

e. Early Start Sort. In order of earliest allowable start dates, then in order of total float, then preceding event numbers, then in order of succeeding event number, and then in order of following event number reflecting only thru 90 days from date of report. Dummy activities and activities with more than 90 days of total float are omitted.

f. Cost Summary Report. In order of earliest and latest finish dates. Dummy and completed activities are omitted.

g. Responsibility ES-TF-I-J Sort. By responsibility, in order of earliest allowable start date, then in order of total float, then in order of preceding event number, and then in order of following event number; reflecting a 90-day period from the date of the report. Dummy activities omitted; completed activities are included.

h. Barchart. By activity in order of earliest allowable start date; then in order of total float, then preceding event number, and then in order of following event number reflecting activity description, remaining duration, respective starts and finishes, float, and criticality; and representing a period of 90 days from the date of the report. Where slack exists, the activities shall be shown on their early schedule dates (early start and early finish). Dummy and completed activities are omitted.

i. Milestones Sort. By preceding event number from lowest to the highest and then in the order of following event number.

j. The Contractor shall submit with the original submittal and major revisions thereafter, labor manning by craft, by activity.

(5) The complete network analysis system consisting of the CPM/ADM mathematical analysis and logic diagrams, for the entire project, shall be submitted within sixty (60) calendar days after receipt of notice to proceed. No payment will be made during the first ninety (90) days without an approved preliminary logic diagram, nor after the first ninety (90) days without an approved and tested, complete network analysis system.

(6) The Contractor shall participate in a review and evaluation of the proposed logic diagrams and CPM/ADM mathematical analysis by the Contracting Officer. Any revisions necessary as a result of their review shall be resubmitted for approval to the Contracting Officer within ten (10) calendar days after the review. The approved NAS schedule shall then be the schedule to be used by the Contractor for planning, organizing, and directing the work and for reporting progress and requesting payment for work accomplished. If the Contractor thereafter does not follow his planned schedule or desires to make changes in his method of operating and scheduling, he shall notify the Contracting Officer in writing stating the reasons for the change. Progress payments will be awarded based on amount judged complete in conjunction with the approved activity sequence. Progress payments on work out of sequence will not be allowed unless logic changes are made and approved by the Contracting Officer prior to submission of the updated CPM/ADM mathematical analysis. If the Contracting Officer recognizes major logic changes or considers these Contractor changes to be of a major nature, he will require the Contractor to revise and submit for approval, without additional cost to the Government, all of the affected portion of the detailed logic diagrams and CPM/ADM mathematical analysis, as well as the summary logic diagram to show the cumulative effect of the changes on the entire project. A change will be considered of a major nature if the time estimated to be required or actually used for an activity or the logic sequence of activities is varied from the original plan to such a degree that there is a reasonable doubt in the opinion of the Contracting Officer's representative as to the effect on the contract completion date or dates. Changes which affect activities with adequate total float time shall be considered as minor changes, except that an accumulation of minor changes will be considered a major change when their cumulative effect affects the project or a contractual or work item completion date. The effect of minor changes on logic shall be shown on each monthly update and described fully in the accompanying manually prepared narrative progress report.

(7) The Contractor shall submit, at intervals of thirty (30) calendar days, a report of the actual construction progress by updating the CPM/ADM mathematical analysis. The update information shall be verified by the Contracting Officer prior to processing and shall include all conditions which would influence the CPM/ADM mathematical analysis results. Revisions causing changes in the detailed logic diagram shall be noted on the summary logic diagram, and a revised issue of affected portions of the detailed logic diagram will be furnished along with the CPM/ADM mathematical analysis. The summary logic diagram shall be revised as necessary for the sake of clarity at the option of the Contracting Officer. However, only the initial submission or complete revisions need be time scaled. Subsequent minor revisions need not be time scaled. For each completed phase, the manually prepared progress report need only show total value of work. The date to be used for calculating progress (update data date) will be the first work day of the month following the progress month, with remaining project work scheduled and total float recalculated from that date in the CPM/ADM mathematical analysis.

a. The progress report shall include the activities or portions of activities completed during the reporting period and their total value as basis for the Contractor's periodic request for payment. Payment made pursuant to the Contract Clause entitled "Payments Under Fixed Price Construction Contracts" will be based on the total value of such activities completed or partially completed after verification by the Contracting Officer. The report shall state the percentage of the work actually completed and scheduled, as of the report date, and the progress along the critical path in terms of days ahead or behind the approved contract completion dates. If the project is behind schedule, progress along all paths with total float equal to or less than the number of days that the project is behind schedule shall also be reported. The Contractor shall also submit a manually prepared progress reporting narrative form with the updated CPM/ADM mathematical analysis which shall include, but not be limited to, a description of the problem areas (current and anticipated), delaying factors and their impacts and an explanation of corrective actions taken or proposed. This report is mandatory.

b. In addition to the CPM/ADM mathematical analysis reports, a manually prepared progress report shall be submitted to include the following data:

1. Identification of activities which are planned to be expedited by use of overtime or double shifts to be worked including Saturdays, Sundays, and Holidays;

2. A description of the major items of construction equipment planned for operation of the project. (The description shall include the type, number of units, and unit capacities. A schedule shall be provided showing proposed times the equipment shall be on the job and shall be keyed to activities on which equipment will be used.); and

3. Where portions of the work are to be paid by unit cost, the estimated number of units in an activity which were used in developing the total activity cost.

c. Each monthly update report will include a monitor of input. This monitor of input will show all changes of input to the CPM/ADM mathematical analysis for that update.

d. The monthly update shall include a separate modification summary status report showing for each negotiated/approved modification the following:

1. The Corps of Engineer's modification numbers (PO# and DO#).
2. The Contractor's modification number.
3. The activity event numbers for each modification activity.
4. The respective activity duration.
5. The total modification negotiated price by activities.

e. Monthly CPM/ADM mathematical analysis reports and manually prepared reports shall be submitted in two (2) copies.

15. CERTIFICATES OF COMPLIANCE (1969 MAY OCE)(EFARS 52.2/9108(c))

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in the number of copies specified in Technical Provisions Section: Contractor Quality Control System. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

16. WORK IN QUARANTINED AREA (1968 MAY OCE)(EFARS 52.2/9108(d))

The work called for by this contract involves activities in counties quarantined by the Department of Agriculture to prevent the spread of certain plant pests which may be present in the soil. The Contractor agrees that all construction equipment and tools to be moved from such counties shall be thoroughly cleaned of all soil residues at the construction site with water under pressure and that hand tools shall be thoroughly cleaned by brushing or other means to remove all soil. In addition, if this contract involves the identification, shipping, storage, testing, or disposal of soils from such a quarantined area, the Contractor agrees to comply with the provisions of ER 1110-1-5 and attachments, a copy of which will be made

available by the Contracting Officer upon request. The Contractor agrees to assure compliance with this obligation by all subcontractors.

17. CONTRACTOR QUALITY CONTROL SYSTEM (SWFCD)

The inspection system required by the Contract Clause "Inspection of Construction" shall be in accordance with the following requirements:

(a) The Contractor shall provide and maintain an effective quality control program or Contractor inspection system, as required by the Contract Clause entitled "Inspection of Construction," which will assure that all supplies and services required under the contract conform to contract requirements whether constructed or processed by the Contractor, or procured from subcontractors or vendors. The Contractor shall perform or have performed the inspections and tests required to substantiate that all supplies and services conform to drawings, specifications, and contract requirements and shall also perform or have performed all inspection and tests otherwise required by the contract unless the required inspection and/or test is specifically designated to be performed by the Government. The system shall be implemented by the establishment of a quality control organization separate from the Contractor's production or supervisory staff and report directly to the Contractor's top management. This organization shall consist of not less than one person who will be on the job site at all times work is in progress and whose prime responsibility is to insure compliance with the contract plans and specifications. This organization shall be under the supervision and control of a person having, as a minimum: at least 5 years verifiable construction experience at the skilled-craft foreman level or above; at least 5 years verifiable experience as a construction Contractor's Quality Control Representative; or at least 3 years verifiable experience as a Construction Contractor's Quality Control Representative plus an appropriate engineering degree. The aforementioned construction experience shall have been on projects employing craft-persons and materials similar to those required by this project. This organization shall be supplemented by additional quality control personnel as may be necessary. Mechanical and electrical personnel, either engineers or highly qualified technicians, shall be provided during the testing, balancing, adjusting and/or regulating mechanical and electrical devices and/or systems. The Quality Control Organization personnel shall be a part of the Contractor's staff and not a member of the staff of a subcontractor performing the work. The Contracting Officer reserves the right to have replaced, any member of the Quality Control staff who in the opinion of the Contracting Officer is not accomplishing their assigned duties (See Contract Clause "Material and Workmanship"). The Contractor's inspection system shall be documented, as specified herein, and shall be available for review by the Government prior to the start of construction and throughout the life of the contract. The Contractor shall notify the Government in writing of any proposed change to his inspection system and changes shall be subject to disapproval if they would, in the opinion of the Contracting Officer, result in nonconformance with the contract requirements. The Contractor's inspection system shall include the minimum requirements stated below.

(b) The Contractor's inspection system shall require personnel of his organization to perform or cause to be performed inspections of the scope and character necessary to achieve the quality of construction outlined in the plans and specifications for all work under this contract performed on-site or off-site. The authority and responsibility of inspection and

laboratory personnel shall be prescribed by clear, complete, and current instructions. The laboratories utilized for testing shall meet the Criteria detailed in ASTM D 3740-80, "Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as used in Construction" and ASTM E 329-77, "Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction."

(c) The Contractor's inspection system shall be adequate to cover all construction operations, including both on-site and off-site fabrication and will be keyed to the proposed construction sequence and shall include as a minimum at least three phases of inspection for all definable items or segments of work, as follows:

(1) Preparatory Inspection. To be performed prior to beginning any work on any definable segment of work. To include a review of contract requirements; a check to assure that all materials and/or equipment have been tested, submitted, and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed; and a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all material and/or equipment are on hand. As a part of this preparatory work, Contractor's Quality Control organization will review and certify all shop drawings, certificates, and other submittal data prior to submission to the Contracting Officer. Each submittal offered to the Contracting Officer will bear the date and the signature of a member of the Contractor's Quality Control organization indicating that he has reviewed the submittal and certified it to be in compliance with plans and specifications (or showing the required changes). The Contracting Officer's representative shall be notified a minimum of seventy-two (72) hours prior to the beginning of the Preparatory Inspection.

(2) Initial Inspection. To be performed as soon as a representative segment of the particular item of work has been accomplished and to include examination of the quality of workmanship and a review of control testing for compliance with contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.

(3) Follow-Up Inspections. To be performed daily or as frequently as necessary to assure continuing compliance with contract requirements, including control testing, until completion of the particular segment of work.

(d) The Contractor shall maintain current records on an appropriate approved format of all inspections and tests performed. These records should provide factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspection or tests; nature of defects, causes for rejection, etc.; proposed remedial action; and corrective actions taken. The Contractor shall not build upon or conceal any feature of the work containing uncorrected defects, and payment on deficient items will be withheld until satisfactorily corrected or other action taken as authorized pursuant to the Contract Clause entitled "Inspection of Construction." These records must cover both conforming and defective items and must include a statement that all supplies and materials, incorporated in the work, are in full compliance with the terms of the contract. Legible copies must be furnished to the Contracting Officer daily. The report will cover

all work placement subsequent to the previous report, and will be verified by the prime Contractor's designated representative. The Contractor shall include in any subcontract, purchase order, or other agreement, either written or oral with a commercial testing laboratory for quality control testing under the subject contract, a requirement that copies of any test reports, data or other information relating to tests conducted by said laboratory under this contract, be mailed simultaneously to the Contracting Officer, or his authorized representative, when said report, data, or other information are mailed or delivered to the Contractor.

(e) The Contractor shall establish controls necessary to assure scheduled completion dates established by the contract are not impacted by delinquent submittal data and/or operational tests. Sixty days in advance of the contract completion date and prior to scheduling a prefinal inspection of the work, or any phase of work, under the contract, the Contractor shall submit to the Contracting Officer a complete and factual report of all remaining submittals, inspections, and tests required prior to acceptance of the work. The report shall include the following:

(1) A list of outstanding shop drawing submittals or resubmittals requiring approval by the Contractor.

(2) A list of manuals, test reports, spare parts, keys, etc., to be furnished to the Government, and scheduled submittal dates.

(3) Schedule of required operational tests and/or instruction periods.

(4) Scheduled delivery dates for materials or equipment impacting contract completion dates.

(5) Plan of action by the Contractor for correcting any known contract deficiencies including delay in scheduled progress.

(f) The Contractor shall maintain marked-up drawings depicting as-built conditions. These drawings will be maintained in a current condition at all times until completion of the work and will be available for review by Government personnel at all times. All variations from the contract plans, for whatever reason including those occasioned by the required coordination between trades, will be indicated. These variations will be shown in the same general detail utilized in the contract plans. Upon completion of the work, the marked-up drawings will be furnished to the Contracting Officer. The Contractor shall also furnish final as-built drawings as provided in the Technical Provisions of these specifications.

(g) After the contract is awarded and before construction operations are started, the Contractor shall meet with the Contracting Officer or his representative, and discuss the inspection system requirements. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the inspections, administration of the system, and the interrelationship of Contractor and Government inspection. The Contractor shall furnish to the Government within five days after receipt of the Notice to Proceed an inspection system plan which shall include the procedures, instructions, and reports to be used. No payment estimate will be processed under this contract

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until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

(1) Each Quality Control Inspector shall be responsible for inspecting the work under his surveillance for compliance with Corps of Engineers EM 385-1-1, Safety and Health Requirements Manual, and approved safety program, and shall immediately bring to the attention of the Contractor's supervisory personnel any unsafe working condition and/or instance of non-compliance noted.

(m) Completion inspections.

(1) Contractor's Quality Control Completion Inspection. Based upon the Contracting Officer's concurrence that the work is nearing substantial completion, and at least 14 days prior to pre-final inspection, the Contractor's Quality Control Inspection personnel shall conduct a detailed inspection. The Contracting Officer's Representative shall be notified of the inspection date in order that he may participate, if he so elects. The work shall be inspected for conformance to plans, specifications, quality, workmanship, and completeness. The Contractor shall prepare an itemized list of work not properly completed, inferior workmanship, or not conforming to plans and specifications. The list shall also include outstanding administrative items such as as-built drawings, O & M Manuals, spare parts, installed property list, etc. The list shall be included in the Quality Control documentation and submitted to the Contracting Officer with an estimated date for correction of each deficiency within five (5) working days after conducting this inspection.

(2) Pre-Final Inspection. The Contractor's Quality Control Inspection personnel, his superintendent, or other primary management person and the Contracting Officer's representatives will be in attendance at this inspection. Additional Government personnel, including but not limited to those from Base/Post Civil/Facility Engineer, user groups and major commands may be in attendance. The prefinal inspection will be formally scheduled by the Contracting Officer based upon notice from the Contractor. This notice will be given to the Contracting Officer at least 14 days prior to the pre-final inspection and must include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining contract work, will be complete and acceptable by the date scheduled for the prefinal inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection costs in accordance with the contract clause entitled, "Inspection of Construction." At this inspection the Contracting Officer will develop a specific list of incomplete and/or unacceptable work performed under the contract and will subsequently furnish this list to the Contractor. Failure of the Contracting Officer to detect and list all incomplete and/or unacceptable work during this inspection will not relieve the Contractor from acceptably performing all work required by the contract documents. The Contracting Officer, at his option, may accept this inspection as the final acceptance inspection if in his opinion, the completion status of the inspected facilities and other work performed under the contract, warrant this consideration.

(3) Final Acceptance Inspection. The Contractor's Quality Control Inspection personnel, his superintendent or other primary management person and the Contracting Officer's representatives will be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil/Facility Engineer, user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon Notice from the Contractor. This notice will be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and must include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection costs in accordance with the contract clause entitled, "Inspection of Construction." At this inspection the Contracting Officer will develop a specific list of incomplete and/or unacceptable work and will subsequently furnish this list to the Contractor.

(n) Inventory of installed property. A list of equipment or units of equipment that require electrical power or fuel, or may require removal or replacement, such as AHUs, fans, air conditioners, compressors, condensers, boiler, thermal exchangers, pumps, cooling towers, tanks, fire hydrants, etc., shall be made and kept up to date as installed. The list shall be reviewed periodically by the Government to insure completeness and accuracy. Partial payment will be withheld for equipment not incorporated in the list. List shall include on each item as applicable: Description, Manufacturer, Model or Catalog No., Serial No., Input (power, voltage, BTU, tons, etc.), Size or Capacity (tanks), and net inventory costs; any other data necessary to describe item. Final list shall be turned over to the Authorized Representative of the Contracting Officer two weeks prior to prefinal inspection.

(o) Warranty of Construction.

(1) Performance Bond.

a. At the final acceptance of the work the Contractor shall provide the Contracting Officer with a Warranty Performance Bond to secure the Contractor's warranty obligations under the Technical Provisions Section entitled WARRANTY OF CONSTRUCTION. The penal sum of the bond shall be in an amount not less than 2% of the contract amount as adjusted by any modifications or supplemental agreements executed during the administration of the contract. The bond shall remain in effect throughout the warranty period as specified under Technical Provisions Section: WARRANTY OF CONSTRUCTION. The Warranty Performance Bond shall be issued by a Corporate surety with a valid and current Certificate of Authority as an acceptable surety, issued by the Department of Treasury.

b. In the event the Contractor or his designated representative fails to commence and diligently pursue any work required under the Warranty of Construction Section of the Technical Provisions

within seventy two hours after receipt of written notification pursuant to the requirements thereof, the Contracting Officer shall have a right to demand that said work be performed under the Warranty Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Warranty Performance Bond, the Contracting Officer shall have the work performed by others, and after completion of the work, shall make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses. Failure of the Contractor to submit the above Warranty of Performance Bond will result in the withholding of 2% of the final contract amount. The un-expended portion of this 2% withholding will be paid to the Contractor after expiration of the warranty period and extensions to it.

(2) Pre-Warranty Conference. Prior to contract completion and at a time designated by the Contracting Officer or his representative, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of the SECTION: WARRANTY OF CONSTRUCTION, DIVISION 1, of this specification. The Contracting Officer shall establish communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect and reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty.

In connection with these requirements the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and maintain warranty work action on behalf of the Contractor. This single point of contact will be located within the local service area of the warrantied construction and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with the Technical Provisions Section: WARRANTY OF CONSTRUCTION.

18. ACCIDENT PREVENTION PREPLANNING (SWFCD)

In addition to the requirements of the Contract Clause "Accident Prevention," the Contractor will:

(a) Meet with the area engineer and/or his representative before each major phase of construction. The purpose of the meeting will be to identify the specific hazards that are associated with that phase of construction. The meeting will include the general Contractor's superintendent, Quality Control Inspector, and superintendent or foreman in charge of the operation whether performed by the general Contractor or sub-contractor.

(b) Identify at this meeting what construction methods and equipment will be used to protect the workmen against the hazards that are anticipated during that phase of construction. This plan, when agreed upon by the area engineer and Contractor, will become a part of the Contractor's safety program.

(c) Be responsible for insuring that all sub-contractors are knowledgeable and follow the safety plan agreed upon by the Contractor and area engineer.

19. SCHEDULE FOR SUBMITTALS: (SWFCD)

A schedule shall be submitted to the Contracting Officer within 21 calendar days after the date of receipt of the notice to proceed. This schedule, submitted in quadruplicate, shall indicate, among other things, the Contractor's proposed schedule for submitting shop drawings, manufacturer's literature, certificates of compliance, material samples, computations, test results, design mixes, mill reports, layouts, guarantees, etc. Additionally, the schedule shall reflect the following information for each item:

- (a) Description.
- (b) Reference to the applicable paragraph in the contract specifications and/or plate number in chronological order of the contract drawings that requires the submittal.
- (c) The dates he proposes to furnish the submittals.
- (d) The dates the materials, equipment, etc., are needed at the jobsite.
- (e) Designation of shop drawing category (Category I or II).
- (f) The date that approval is needed by the Contractor. (A minimum of 60 days or more should be allowed for Government Review of Category I shop drawings.)

Upon request, the Contracting Officer will furnish forms on which the above information can be tabulated. In preparing the schedule, the Contractor shall coordinate it with the approved contract progress schedule and shall allow a minimum of 21 days for its review and approval by the Contracting Officer. Furnishing of the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all of the contract requirements for the items listed on the schedule. The Contractor's quality control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective and updated system and a copy of the schedule shall be maintained at the jobsite. Revised and/or updated schedules shall be submitted to the Contracting Officer at least every 60 days in quadruplicate (complete register need not be provided, only those portions containing additions or changes). Payment will not be made for any material or equipment which does not comply with contract requirements.

20. PAYMENT FOR MATERIALS DELIVERED OFF-SITE (1983 MAY OCE) (EFARS 52.2/9102(e))

Pursuant to the Contract Clause entitled "Payments Under Fixed-Price Construction Contract," materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to those materials which have been approved, if required by the technical provisions; those materials which have been fabricated to the point where after receipt of paid or receipted invoices or invoices with cancelled check showing title to the items in the prime contractor and including the value of materials and labor

incorporated into the item. In addition to petroleum products, this clause will be limited to the following items: None.

21. INCLUSION OF LABOR PROVISIONS IN SUBCONTRACTS (1984 JUN OCE)

To show compliance with contract clause entitled Subcontracts, the Contractor should, within seven days after award of any subcontract either by himself or a subcontractor of any tier, deliver to the Contracting Officer a completed Standard Form 1413 or DD Form 1566. Nothing contained in this clause or any other provision of this contract shall create any contractual relation between any subcontractor and the Government.

22. OPERATION AND MAINTENANCE INSTRUCTIONS, SPARE PARTS LISTS, SPARE PARTS, SPECIAL TOOLS, AND INVENTORIES OF INSTALLED PROPERTIES. (SWFCD)

The Contractor shall be responsible for the preparation, coordination, and execution of all operation and maintenance instructions furnished by his subcontractors and/or suppliers. The instructions shall be in sufficient detail to facilitate normal maintenance and troubleshooting by persons without previous experience with the installed equipment.

(a) All of the above listed items required in the SPECIAL CONTRACT CLAUSES and Technical Provisions of these specifications shall be submitted to the Contracting Officer not less than 60 days prior to the scheduled contract completion date or phase thereof. Failure to submit all specified operation and maintenance manuals, spare parts listings, spare parts, special tools and inventories of installed property in a timely manner shall be cause for withholding of payment and for delaying substantial completion of the work. Commencement of warranty under the Technical Provisions Section entitled Warranty of Construction, will not occur until all these items are delivered, and approved by the Contracting Officer.

(b) Field instructions. The Contractor shall coordinate the content of each instruction period required in the Technical Provisions of these specifications with the Contracting Officer's representative prior to the actual start of the training period.

23. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (1982 JUN OCE)
(EFARS 52.2/9108(f))

(a) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor for work requiring adjustment in contract price shall be based upon actual costs, provided both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series are proposed by the Contractor or known by the Contracting Officer to be available. When actual equipment costs are proposed, the Contracting Officer may require the Contractor to provide documentation in support of such costs. When actual costs are neither proposed nor known to be available, equipment costs shall be based upon the applicable provisions of the "Construction Equipment Ownership and Operating Expense Schedule," Region VI. For forward pricing, the Schedule in effect at the time of negotiations shall apply. For retrospective pricing, the Schedule in effect as of the time work was performed shall apply. For the purpose of determination of the hourly rates to be applied under this contract, working conditions shall be considered to be average unless otherwise determined by the Contracting Officer. Rates for equipment not in the schedule will be computed by the Government using the formulas in the schedule. Where

applicable, rates in the schedule may be used for unlisted equipment of comparable horsepower and auxiliary features.

(b) Equipment rental costs are allowable, subject to the provisions of FAR 31.205-36, substantiated by certified reproduced copies of invoices or bills. Rates for equipment rented from an organization under common control, lease-purchase or sale-leaseback arrangements will be determined in accordance with the schedule. A copy of the schedule will be provided to the successful bidder upon request.

24. PROMPT PAYMENT ACT (DAEN-PRP MG #F2534B 12 JUL 84)

Payment under this contract, for which property or services are provided in a series of partial executions or deliveries will be made within 15 days after receipt of an invoice which has been properly executed by the vendor, approved by the Contracting Officer, and received at the paying office.

25. PERFORMANCE EVALUATION OF CONTRACTOR (APR 1984)(DAEN-PRP 15 JUN 84)

As a minimum, the Contractor's performance will be evaluated upon final acceptance of the work. However, interim evaluation may be prepared at any time during contract performance when determined to be in the best interest of the Government.

The format for the evaluation will be SF 1420, and the Contractor will be rated either outstanding, satisfactory, or unsatisfactory in the areas of Contractor Quality Control, Timely Performance, Effectiveness of Management, Compliance with Labor Standards, and Compliance with Safety Standards. The Contractor will be advised of any unsatisfactory rating, either in an individual element or in the overall rating, prior to completing the evaluation, and all contractor comments will be made a part of the official record. Performance Evaluation Reports will be available to all DOD Contracting offices for their future use in determining contractor responsibility, in compliance with DOD FAR SUPP 36.201(c)(1).

END OF PART I

APPENDIX A - BORING LOGS

GENERAL NOTES:

Boring logs on the following sheets shall not be copied or altered. Logs may show ground water depths on the dates measured. The water level may vary considerably from the levels shown depending on season, weather conditions and other factors. Absence of water surface data implies that no ground water data is available and should not be construed to mean that groundwater was not present or that groundwater will not be encountered at the locations of these borings. Any conclusions drawn by the Contractor regarding groundwater level shall be the Contractor's sole responsibility.

Boring logs are included for the following:

Borrow Areas:

8A-812	8A-821
8A-813	8A-822
8A-814	8A-823
8A-815	8A-824
8A-816	3A-825
8A-817	3A-826
8A-818	3A-827
8A-819	3A-828
8A-820	3A-829

Pond Site:

BH-1	BH-6
BH-2	BH-7
BH-3	BH-8
BH-4	BH-9
BH-5	BH-10

Locations of the borings listed above are shown on the plans.

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AUG 1 1984

Hole No. 8A-812

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
				OF	SHEETS	
1. PROJECT		SWD	FWD	1		
2. LOCATION (Coordinates or Station)		Longhorn AAP	10. SIZE AND TYPE OF BIT. 8" Push			
3. DRILLING AGENCY		USCE	11. DAYUM FOR ELEVATION SHOWN (75% = REL)			
4. HOLE NO. (As shown on drawing title and file number)		8A-812	12. MANUFACTURER'S DESIGNATION OF DRILL			
5. NAME OF DRILLER		Williams	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN			
6. DIRECTION OF HOLE			14. TOTAL NUMBER CORE BOXES			
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE			
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE			
9. TOTAL DEPTH OF HOLE		10.0	18. TOTAL CORE RECOVERY FOR BORING			
			19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			0.0-2.5			JAR SAMPLES:
			CLAY, SOFT, WET TAN, SANDY.			A. 0.0-2.5
			2.5-5.0			B. 2.5-5.0
			CLAY, SANDY, STIFF, MOIST, LOW PHOS.			C. 5.0-10.0
			5.0-10.0			
			CLAY, SILTY, STIFF, MOIST, YELLOW-BROWN, LT. GRAY, LOW-MED PHOS.			
			T.A @ 10.0'			

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001004

Hole No. **8A 813**

DRILLING LOG		DIVISION SWD		INSTALLATION FWD		SHEET 1 OF 1 SHEETS	
1. PROJECT Longhorn AAP				10. SIZE AND TYPE OF BIT 8" Push			
2. LOCATION (Coordinate or Station) Common BORROW				11. DAY OF YEAR FOR ELEVATION SHOWN (YR - MS)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL TEXHOMA			
4. HOLE NO. (As shown on drawing title and file number) 8A-813				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 4 JAR		UNDISTURBED 3 BAGS	
5. NAME OF DRILLER Williams				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE STARTED 3/29/84 COMPLETED 3/29/84			
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE 200.0			
9. TOTAL DEPTH OF HOLE 10.0				18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR Radman, L. T. Kaper			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			0.0-4.0 CLAY, SANDY, GRAY. 0.0-2.0 SOFT, WET 2.0-4.0 V. STIFF, MOIST.			JAR SAMPLES: A. 0.0-2.0 B. 2.0-4.0 C. 4.0-8.0 D. 8.0-10.0	
			4.0-8.0 CLAY, SILTY, SANDY, LT. GRAY & YELLOW-BRN, MED-LOW PHAS.			BAG SAMPLES: THREE BAGS OBTAINED FROM 2.0-5.0	
			8.0-10.0 CLAY, LT. GRAY & YELLOW-BRN, MED-H, PHAS T.O. @ 10.0'				

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001005

DRILLING LOG		DIVISION	INSTALLATION	Hole No. 8A-84		SHEET OF	SHEETS
1. PROJECT		5WD		FWD			
2. LOCATION (Coordinates or Station)		LONGHORN AAP		10. SIZE AND TYPE OF BIT		8" PUSH	
3. DRILLING AGENCY		COMMON BORROW		11. DATUM FOR ELEVATION SHOWN (FSL - MSL)			
4. HOLE NO. (As shown on drawing title and file number)		USCE		12. MANUFACTURER'S DESIGNATION OF DRILL		TEXHOMA	
5. NAME OF DRILLER		8A-814		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		3 JAR NONE	
6. DIRECTION OF HOLE		WILLIAMS		14. TOTAL NUMBER CORE BOXES			
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		8.5	
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED 3/29/81 COMPLETED 3/29/81	
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE		200.5	
9. TOTAL DEPTH OF HOLE		10.0		18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR		Richard T. Hayden	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY	2. BOX OR SAMPLE NO.	REMARKS (Drilling data, water loss, depth of weathering, etc., if significant)	
			0.0-0.5 CLAY, V. SANDY, SOFT, WET.			JAR Samples	
			0.5-4.0 CLAY, SOFT-MED. STIFF, WET, YELLOW-BRN & LT. GRAY, MED. PLAS.			A. 0.5-4.0	
			4.0-6.0 CLAY, STIFF, MOIST, LT. GRAY & RUST. MED-H, PLAS			B. 4.0-6.0	
			6.0-8.5 CLAY, SANDY, MED. STIFF, MOIST, YELLOW-BROWN & LT. GRAY. MED. PLAS			C. 6.0-8.5	
			8.5-10.0 SAND, CLAYEY, TAN, SATD, FINE				
			T.D. @ 10.0'				

001006

Hole No. **8A-815**

DRILLING LOG		DIVISION SWD		INSTALLATION FWD		SHEET 1 OF 1 SHEETS	
1. PROJECT Longhorn AAP				10. SIZE AND TYPE OF BIT 8" PUSH			
2. LOCATION (Coordinates or Station) Common Barrow				11. DATUM FOR ELEVATION SHOWN (TBM or ASL)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL Tex-Homa			
4. HOLE NO. (As shown on drawing title and file number) 8A-815				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 4 Jars		UNDISTURBED None	
5. NAME OF DRILLER Williams				14. TOTAL NUMBER CORE BOXES		15. ELEVATION GROUND WATER 8.5	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE 3/29/84		STARTED 3/29/84 COMPLETED 3/29/84	
7. THICKNESS OF OVERBURDEN				17. ELEVATION TOP OF HOLE 200.4		18. TOTAL CORE RECOVERY FOR BORING	
8. DEPTH DRILLED INTO ROCK				19. SIGNATURE OF INSPECTOR Raymond L. Kuylen			
9. TOTAL DEPTH OF HOLE 10.0							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			0.0 - 3.5 CLAY, SANDY, SOFT, MOIST, YELLOW-BRN & RUST			JAR SAMPLES: A. 0.0 - 3.5 B. 3.5 - 6.0 C. 6.0 - 8.5 D. 8.5 - 10.0	
			3.5 - 6.0 CLAY, STIFF, MOIST, LT. GRAY & RED-BROWN, H. PLAS				
			6.0 - 8.5 CLAY, V. SANDY, MED. STIFF, WET, TAN				
			8.5 - 10.0 SAND, CLAYey, SAT'D, TAN, FINE				
			T.D. @ 10.0'				

A-5

001007

Hole No. **8A 816**

DRILLING LOG		DIVISION	INSTALLATION	SHEET	
1. PROJECT		JWID	FWD	OF SHEETS	
2. LOCATION (Coordinates or Station)		10. SIZE AND TYPE OF BIT			
3. DRILLING AGENCY		11. DATUM FOR ELEVATION SHOWN (FBN or MSL)			
4. HOLE NO. (As shown on drawing title and file number)		12. MANUFACTURER'S DESIGNATION OF DRILL			
5. NAME OF DRILLER		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN			
6. DIRECTION OF HOLE		14. TOTAL NUMBER CORE BOXES			
7. THICKNESS OF OVERBURDEN		15. ELEVATION GROUND WATER			
8. DEPTH DRILLED INTO ROCK		16. DATE HOLE			
9. TOTAL DEPTH OF HOLE		17. ELEVATION TOP OF HOLE			
		18. TOTAL CORE RECOVERY FOR BORING			
		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	2. CORE RECOVERY	BOX OR SAMPLE NO.
					REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			0.0-3.0		
			CLAY, SANDY, SOFT, WET TAN, MED. PLAS.		JAR SAMPLES
			3.0-6.0		A. 0.0-3.0
			CLAY SANDY, STIFF, MOIST, LT. GRAY, MED-HI PLAS.		B. 3.0-6.0
			6.0-10.0		C. 6.0-10.0
			CLAY, V. SANDY, STIFF, WET, TAN, LOW PLAS.		
			T.O. @ 10.0'		

A-6

Hole No. **SA-817**

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
					OF	SHEETS
1. PROJECT Longhorn AAP			10. SIZE AND TYPE OF BIT 8" Push			
2. LOCATION (Coordinates or Station) Common Borrow			11. DATUM FOR ELEVATION SHOWN (BSN - MSL)			
3. DRILLING AGENCY USCE			12. MANUFACTURER'S DESIGNATION OF DRILL TEXOMA			
4. HOLE NO. (As shown on drawing title and file number) SA-817			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 3 JAR	UNDISTURBED 3 BAGS
5. NAME OF DRILLER WILLIAMS			14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE		STARTED 3/30/84	COMPLETED 3/30/84
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE 199.8			
9. TOTAL DEPTH OF HOLE 10.0			18. TOTAL CORE RECOVERY FOR BORING			
			19. SIGNATURE OF INSPECTOR <i>Raymond L. T. Nguyen</i>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	1. CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0-2.5 CLAY, SANDY, SOFT, WET, TAN, MED. PLAS.			JAR SAMPLES: A. 0.0-2.5 B. 2.5-5.5 C. 5.5-10.0
			2.5-5.5 CLAY, MED. STIFF, MOIST, LT. GRAY MOTTLED RUST, H. PLAS.			BAG SAMPLES: THREE BAGS OBTAINED FROM 2.0-5.0
			5.5-10.0 CLAY, V. SANDY, MED DENSE, MOIST-WET, LT. GRAY MOTTLED RUST, MED-low plas			
			T.D. @ 10.0'			

A-7

DRILLING LOG		DIVISION SWD		INSTALLATION FWD		SHEET 1 OF 1 SHEETS	
1. PROJECT LONGHORN AAP				10. SIZE AND TYPE OF BIT 5" P131			
2. LOCATION (Coordinates or Station) IMPERVIOUS BURROW				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL TEXOMA			
4. HOLE NO. (As shown on drawing title and file number) 8A-818				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 3 JAR UNDISTURBED 3 BAGS			
5. NAME OF DRILLER WILLIAMS				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE STARTED 4/2/84 COMPLETED 4/2/84			
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE 299.4			
9. TOTAL DEPTH OF HOLE				18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR <i>[Signature]</i>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			<u>0.0-6.5</u> CLAY , STIFF, MOIST, LT. GRAY & RUST, H. PLAS.			<u>JAR SAMPLES</u> A. 0.0-6.5 B. 6.5-8.5 C. 8.5-10.0	
			<u>6.5-8.5</u> CLAY , SANDY, STIFF, MOIST, LT. GRAY & RUST, LOW-MED. PLAS.				
			<u>8.5-10.0</u> SAND , CLAYEY, MED. DENSE, FINE, LOW PLAS.			<u>BAG SAMPLES</u> THREE BAGS OBTAINED FROM 2.0'-4.0'	
			T. D. @ 10.0'				

A-8

001010

Hole No. **8A-819**

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		S.W.D	FWJ		1	
1. PROJECT Longhorn AAP			10. SIZE AND TYPE OF BIT			
2. LOCATION (Coordinates or Station) IMPERVIOUS BORROW			11. DAYUM FOR ELEVATION SHOWN (TBM or ASL)			
3. DRILLING AGENCY USCE			12. MANUFACTURER'S DESIGNATION OF DRILL TEX/OMM			
4. HOLE NO. (As shown on drawing title and also marked) 8A-819			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 3 Jar UNDISTURBED None	
5. NAME OF DRILLER WILLIAMS			14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED 4/2/84 COMPLETED 4/2/84			
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE 298.3			
9. TOTAL DEPTH OF HOLE 10.0			18. TOTAL CORE RECOVERY FOR BORING			
			19. SIGNATURE OF INSPECTOR Raymond T. Hayes			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 - 3.0 CLAY STIFF, MOIST, RED-BROWN, Hi PLAS.			JAR SAMPLES.
			3.0 - 6.0 SAND , V. clayey, MED. DENSE, MOIST, RED-BROWN, Low PLAS.			A. 0.0 - 3.0
						B. 3.0 - 6.0
						C. 6.0 - 10.0
			6.0 - 10.0 CLAY , SANDY, TUFF, MOIST, RED-BROWN, MED. PLAS.			
			T.D. @ 10.0			

A-9

001011

Hole No. **8A-820**

DRILLING LOG		DIVISION SWD		INSTALLATION FW-1		SHEET 1 OF SHEETS	
1. PROJECT LONGHORN AAP				10. SIZE AND TYPE OF BIT 8" PUSH			
2. LOCATION (Coordinate or Station) IMPERVIOUS BORROW				11. DATUM FOR ELEVATION SHOWN (FEM - MEAS)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL TEXHOMA			
4. HOLE NO. (As shown on drawing title and file number) 8A-820				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		14. TOTAL NUMBER CORE BOXES	
5. NAME OF DRILLER William S				15. ELEVATION GROUND WATER NOT ENCOUNTERED		16. DATE HOLE STARTED 4/2/84 COMPLETED 4/2/84	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				17. ELEVATION TOP OF HOLE 301.5		18. TOTAL CORE RECOVERY FOR BORING	
7. THICKNESS OF OVERBURDEN				19. SIGNATURE OF INSPECTOR Raymond F. Nguyen		19. SIGNATURE OF INSPECTOR	
8. DEPTH DRILLED INTO ROCK				20. TOTAL DEPTH OF HOLE 10.0			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
			0.0-5.5 CLAY, MED. STIFF, MOIST, RED-BROWN & LT. GRAY, H. PLAS.			JAR SAMPLES: A. 0.0-5.5 B. 5.5-10.0	
			5.5-10.0 SAND, SILTY, CLAYEY, MED. DENSE, MOIST, TAN, LOW PLAS.			BAG SAMPLES: THREE BAGS OBTAINED FROM 2.0-5.0	
			T.D. @ 10.0				

A-10

001012

Hole No. **8A 821**

DRILLING LOG		DIVISION <u>SWD</u>		INSTALLATION <u>FW-1</u>		SHEET <u>1</u> OF <u>1</u> SHEETS	
1. PROJECT <u>LONGHORN AAP</u>				10. SIZE AND TYPE OF BIT <u>5" PUSH</u>			
2. LOCATION (Coordinate or Station) <u>IMPERVIOUS BORROW</u>				11. DATUM FOR ELEVATION SHOWN (BSM or ASL)			
3. DRILLING AGENCY <u>USCE</u>				12. MANUFACTURER'S DESIGNATION OF DRILL <u>TEXHOMA</u>			
4. HOLE NO. (As shown on drawing title and file number) <u>8A-821</u>				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		UNDISTURBED	
5. NAME OF DRILLER <u>WILLIAMS</u>				14. TOTAL NUMBER CORE BOXES		15. ELEVATION GROUND WATER <u>NAT ENCOUNTERED</u>	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE <u>4/2/84</u>		STARTED <u>4/2/84</u> COMPLETED <u>4/2/84</u>	
7. THICKNESS OF OVERBURDEN				17. ELEVATION TOP OF HOLE <u>279.1</u>		18. TOTAL CORE RECOVERY FOR BORING	
8. DEPTH DRILLED INTO ROCK				19. SIGNATURE OF INSPECTOR <u>Radmond T. Hagen</u>			
9. TOTAL DEPTH OF HOLE <u>10.0</u>							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			<u>0.0-5.0</u> <u>CLAY</u> , SANDY, MED. STIFF, MOIST, TAN & RED-BROWN, MED. PLAS.			<u>JAR SAMPLES:</u> A. 0.0-5.0 B. 5.0-10.0	
			<u>5.0-10.0</u> <u>CLAY</u> SANDY, MED. STIFF, MOIST, TAN & RUST, MED. PLAS.			<u>BAG SAMPLES:</u> THREE BAGS OBTAINED FROM 2.0-5.0'	
			<u>T.O. @ 10.0'</u>				

A-11

001013

Hole No. **8A 822**

DRILLING LOG		DIVISION SWD		INSTALLATION FWI		SHEET 1 OF 13	
1. PROJECT LONGHORN AAP				10. SIZE AND TYPE OF BIT 3" PUSH			
2. LOCATION (Coordinates or Station) IMPERVIOUS BORROW				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL TEXHOMA			
4. HOLE NO. (As shown on drawing title and file number) 8A-822				13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 2 JAR NONE			
5. NAME OF DRILLER William S				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE STARTED 4/2/84 COMPLETED 4/2/84			
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE 281.7			
9. TOTAL DEPTH OF HOLE 10.0				18. TOTAL CORE RECOVERY FOR BORING			
19. SIGNATURE OF INSPECTOR Richard T. Nguyen							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, hole loss, depth of weathering, etc., if significant) g	
			<u>0.0-6.0</u> CLAY SANDY, MED. STIFF, MOIST, TAN & RUST, MED. PLAS.			<u>JAR SAMPLES</u>	
			<u>6.0-10.0</u> CLAY V. SANDY, MED. STIFF, MOIST, TAN & RUST, MED. PLAS.			A. 0.0-6.0 B. 6.0-10.0	
			T.O. @ 10.0'				

A-12

001014

Hole No. **8A 823**

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF SHEETS	
1. PROJECT Longhorn AAP			10. SIZE AND TYPE OF BIT 8" PUSH			
2. LOCATION (Coordinates or Station) IMPERVIOUS BORROW			11. DAYUM FOR ELEVATION SHOWN (TUM or MSL)			
3. DRILLING AGENCY USCE			12. MANUFACTURER'S DESIGNATION OF DRILL TERAMA			
4. HOLE NO. (As shown on drawing title and file number) 8A-823			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 2 JAR		UNDISTURBED None	
5. NAME OF DRILLER WILLIAMS			14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER NOT ENCOUNTERED			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED 4/2/84 COMPLETED 4/2/84			
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE 287.3			
9. TOTAL DEPTH OF HOLE 10.0			18. TOTAL CORE RECOVERY FOR BORING 1			
19. SIGNATURE OF INSPECTOR James T. Nguyen						
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	SCORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 - 10.0 CLAY SANDY, STIFF, MOIST, TAN & RUST, MED. PLAT.			JAR SAMPLES: A. 0.0 - 5.0 B. 5.0 - 10.0
			T.O. @ 10.0			

A-13

001015

Hole No. 8A-824

DRILLING LOG		DIVISION	INSTALLATION	SHEET		
				OF	SHEETS	
1. PROJECT <u>LONGHORN AAP</u>			10. SIZE AND TYPE OF BIT <u>8" PUSH</u>			
2. LOCATION (Coordinates or Station) <u>IMPERVIOUS BORROW</u>			11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)			
3. DRILLING AGENCY <u>USCE</u>			12. MANUFACTURER'S DESIGNATION OF DRILL <u>TEXHOMA</u>			
4. HOLE NO. (As shown on drawing title and file number) <u>8A-824</u>			13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN			
5. NAME OF DRILLER <u>WILLIAM S</u>			14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <input type="checkbox"/> OGS. FROM VERT.			15. ELEVATION GROUND WATER <u>NOT ENCOUNTERED</u>			
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED <u>1/2/84</u> COMPLETED <u>1/2/84</u>			
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE <u>291.0</u>			
9. TOTAL DEPTH OF HOLE <u>10.0</u>			18. TOTAL CORE RECOVERY FOR BORING			
			19. SIGNATURE OF INSPECTOR <u>Raymond T. Hays</u>			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1 CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, motor loss, depth of weathering, etc., if significant)
			0.0-10.0 <u>CLAY</u> , SANDY, STIFF, MOIST, RUST & LT. GRAY, MED. PLAS			<u>JAR SAMPLES</u> A. 0.0-5.0 B. 5.0-10.0
			T.D. @ 10.0'			

A-14

001016A 825

Hole No. ~~1000~~

DRILLING LOG		DIVISION SWD		INSTALLATION F.U.		SHEET OF SHEETS	
1. PROJECT LONGHORN AAP				10. SIZE AND TYPE OF BIT 3" AUGER			
2. LOCATION (Coordinates or Station) COMMON BORROW				11. DATUM FOR ELEVATION SHOWN (TBM - RL)			
3. DRILLING AGENCY USCE				12. MANUFACTURER'S DESIGNATION OF DRILL HAND AUGER			
4. HOLE NO. (As shown on drawing title and file number) 3A-825				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 3 JAR NONE			
5. NAME OF DRILLER HAGEN				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 5.0'			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE STARTED 4/3/84 COMPLETED 4/3/84			
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE 201.0			
9. TOTAL DEPTH OF HOLE 6.0				18. TOTAL CORE RECOVERY FOR BORING			
				19. SIGNATURE OF INSPECTOR <i>Richard L. T. Hagen</i>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			0.0-2.0 CLAY, V. SANDY, SOFT, WET, TAN, LOW-MED PLAS.			JAR SAMPLES A. 0.0-2.0 B. 2.0-5.0 C. 5.0-6.0	
			2.0-5.0 CLAY, STIFF, MOIST, LT. GRAY & RED-BROWN, H. PLAS.				
			5.0-6.0 CLAY, STIFF, MOIST, RED-BROWN & LT. GRAY, INT. W/ SAT'D SAND SEAMS.				
			T.O. @ 6.0'				

A-15

001017

3A

Hole No.

826

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		SWD	FWP		OF - SHEETS	
1. PROJECT			10. SIZE AND TYPE OF BIT			
Longhorn AAP			3" AUGER			
2. LOCATION (Coordinates or Station)			11. DATUM FOR ELEVATION SHOWN (TBM or BSL)			
Common Barrow						
3. DRILLING AGENCY			12. MANUFACTURER'S DESIGNATION OF DRILL			
USCE			HAND AUGER			
4. HOLE NO. (As shown on drawing title and file number)			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		14. TOTAL NUMBER CORE BOXES	
3A-826			DISTURBED 3 JAR		UNDISTURBED NONE	
5. NAME OF DRILLER			15. ELEVATION GROUND WATER			
William S			4.5			
6. DIRECTION OF HOLE			16. DATE HOLE		17. ELEVATION TOP OF HOLE	
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			STARTED 4/3/84		COMPLETED 7/3/84	
7. THICKNESS OF OVERBURDEN			18. TOTAL CORE RECOVERY FOR BORING			
			200.2			
8. DEPTH DRILLED INTO ROCK			19. SIGNATURE OF INSPECTOR			
9. TOTAL DEPTH OF HOLE			Richard F. Hagen			
6.0						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			0.0-1.5			JAR SAMPLES:
			CLAY, V. SANDY, SOFT, WET, TAN.			A. 0.0-1.5
			1.5-4.5			B. 1.5-4.5
			CLAY, SANDY, STIFF, MOIST, TAN & RED-BROWN, MED-H, PLAS.			C. 4.5-6.0
			4.5-6.0			
			SAND, CLAYEY, DENSE, SAT'D, LT. GRAY MOTTLED RUSS.			
			T.O. @ 6.0			

A-16

DRILLING LOG		DIVISION		INSTALLATION		Hole No.		SHEET	
1. PROJECT		SWD		FWI		827		1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station)		Longhorn AAP		10. SIZE AND TYPE OF BIT		3" AUGER			
3. DRILLING AGENCY		USCE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)					
4. HOLE NO. (As shown on drawing title and file number)		3A-827		12. MANUFACTURER'S DESIGNATION OF DRILL		HAND AUGER			
5. NAME OF DRILLER		HAGEN		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		DISTURBED 2 JAR		UNDISTURBED NONE	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES					
7. THICKNESS OF OVERBURDEN				15. ELEVATION GROUND WATER		NOT ENCOUNTERED			
8. DEPTH DRILLED INTO ROCK				16. DATE HOLE		STARTED 4/2/84 COMPLETED 4/2/84			
9. TOTAL DEPTH OF HOLE		6.0		17. ELEVATION TOP OF HOLE		301.4			
				18. TOTAL CORE RECOVERY FOR BORING					
				19. SIGNATURE OF INSPECTOR		Hagen			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)			
			0.0 - 0.5 SAND, clayey, loose, wet, tan			JAR SAMPLES:			
			0.5 - 3.0 CLAY SANDY, MED. STIFF, MOIST, RED- BROWN, MED. PHAS.			A. 0.5 - 3.0			
			3.0 - 6.0 CLAY STIFF, MOIST, RED-BROWN MOTTLED TAN, MED-H. phos			B. 3.0 - 6.0			
			T.D. @ 6.0						

A-17

001019

3A828

DRILLING LOG		DIVISION		INSTALLATION		Hole No.		SHEET	
1. PROJECT		SWD		FWD		3A-828		1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station)		Longhorn AAP		10. SIZE AND TYPE OF BIT		3" AUGER			
3. DRILLING AGENCY		USCE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)					
4. HOLE NO. (As shown on drawing title and file number)		3A-828		12. MANUFACTURER'S DESIGNATION OF DRILL		HAND AUGER			
5. NAME OF DRILLER		HAGEN		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 2 TAR		UNDISTURBED NONE	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES					
7. THICKNESS OF OVERBURDEN				15. ELEVATION GROUND WATER		Not Encountered			
8. DEPTH DRILLED INTO ROCK				16. DATE HOLE		STARTED 4/3/84		COMPLETED 4/3/84	
9. TOTAL DEPTH OF HOLE		6.0		17. ELEVATION TOP OF HOLE		294.2			
				18. TOTAL CORE RECOVERY FOR BORING					
				19. SIGNATURE OF INSPECTOR		K. Hagen			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY	2. BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)			
			0.0-0.5 SAND, clayey, loose, moist, tan			TAR SAMPLES:			
			0.5-4.0 CLAY, sandy, stiff, moist, red-brown, med. plas.			A. 0.5-4.0			
			4.0-6.0 CLAY, stiff, moist, red-brown mottled lt. gray, med-H. plas.			B. 4.0-6.0			
			T.D. @ 6.0						

A-18

DRILLING LOG		DIVISION <u>SWD</u>		INSTALLATION <u>FL 7</u>		Hole No. <u>00192829</u>		SHEET <u>1</u> OF <u>1</u> SHEETS	
1. PROJECT <u>LONGHORN AAP</u>				10. SIZE AND TYPE OF BIT					
2. LOCATION (Coordinates or Station) <u>IMPERVIOUS BORROW</u>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)					
3. DRILLING AGENCY <u>USCE</u>				12. MANUFACTURER'S DESIGNATION OF DRILL					
4. HOLE NO. (As shown on drawing title and file number) <u>TP-829</u>				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED		UNDISTURBED	
5. NAME OF DRILLER				14. TOTAL NUMBER CORE BOXES		15. ELEVATION GROUND WATER			
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE		STARTED		COMPLETED	
7. THICKNESS OF OVERBURDEN				17. ELEVATION TOP OF HOLE <u>295.9</u>		18. TOTAL CORE RECOVERY FOR BORING			
8. DEPTH DRILLED INTO ROCK				19. SIGNATURE OF INSPECTOR					
9. TOTAL DEPTH OF HOLE									
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g			
			<u>0.0-0.5</u> <u>SAND, clayey, loose,</u> <u>MOIST, TAN.</u>			<u>BAG SAMPLES</u> <u>THREE BAGS</u> <u>OBTAINED FROM</u> <u>1.0-3.0</u>			
			<u>0.5-3.0</u> <u>CLAY, STIFF, MOIST,</u> <u>RED-BROWN, H. PLAS.</u>						

A-19

001021

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104DATE 24 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerDRILL RIG Acker IIBORE HOLE 1
Page 1 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
5	BS	Medium brown silty sand, fine in grain size.	Hit stone.
		Stone	Possible backfill for berm of pond.
	ST	Medium brown fine silty sand with some clay	Very moist
10			
		Tan fine silty sand with some clay	Wet - auger sat for 2 days before finishing.
15	BS		
		Medium brown silty sand with clay	Damp

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
LOCATION Longhorn AAP DRILLERS 1LT Corbitt
Mr. Kestner
DRILL RIG Acker II BORE HOLE 1
Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Med brown silty sand with clay	WT
20			
25			
30			

001023

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
DRILL RIG Acker II BORE HOLE 1
Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
35		Medium brown silty sand with clay	
40			
	MB		
45			

DRILLING LOG

PROJECT 38-26-0104

DATE 24 Jan 80

LOCATION Longhorn AAP

DRILLERS LT Corbitt, Mr. Kestner.

DRILL RIG Acker II

BORE HOLE 1

Page 4 of 4

[illegible]

001025

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of berm
 DRILL RIG Acker II BORE HOLE 2
 Page 1 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
5		Medium brown fine silty sand.	Fairly dry.
	BS		
10	BS	Brick red fine silty sand with some clay	Fairly dry
		Tan fine silty sand with some clay	Getting wet
15			

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of berm
DRILL RIG Acker II BORE HOLE 2
Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
20		Tan fine silty sand with some clay	Getting wet
25			WT
30		Light tan silty sand with very little clay	Wet

001027

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of berm
DRILL RIG Acker II BORE HOLE 2
Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
35		Light tan silty sand with very little clay	
40			
45			

DRILLING LOG

PROJECT 38-26-0104 DATE 24 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of berm
DRILL RIG Acker II BORE HOLE 2
Page 4 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
50		Light tan silty sand with very little clay	Well 52' deep
55		Tan clay, medium plastic	
		Bottom of hole	

001029

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 25 Jan 80

LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner

North side of rocket. Wash rock.

Surface disturbed

DRILL RIG Acker II BORE HOLE 3

Page 1 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Medium brown fine silty sand.	Damp
5	BS	Tan fine silty sand with some clay.	
10	BS		Wet
15			Water running out of hole.

DRILLING LOG

PROJECT 38-26-0104DATE 25 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerNorth side of rocket. Wash rock.Surface disturbed.DRILL RIG Acker IIBORE HOLE 3

Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
20		Tan fine silty sand with some clay	
25			
30			

001031

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104DATE 25 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerNorth side of Rocket. Wash rack.Surface disturbedDRILL RIG Acker IIBORE HOLE 3
Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
35		Tan fine silty sand with some clay	
40			
45			

DRILLING LOG

PROJECT 38-26-0104 DATE 25 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
North side of Rocket. Wash rack.
Surface disturbed
DRILL RIG Acker II BORE HOLE 3

Page 4 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
45		Medium brown silty clay.	Hangs to auger
50		Bottom of hole	WT

001033

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104DATE 26 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. Kestner10 feet to east side of roadDRILL RIG Acker IIBORE HOLE 4

Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Tan fine silty sand with some clay	
			Water
			WT
20			
25			
30			

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
10 feet to east side of road
DRILL RIG Acker II BORE HOLE 4

Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Tan fine silty sand with some clay	
35	MB		
40			
45			

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
10 feet to east side of road
DRILL RIG Acker II BORE HOLE 4

Page 4 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Tan fine silty sand with some clay	
		Medium brown silty clay.	Hangs to auger
50		Bottom of hole	
55			
60			

DRILLING LOG

PROJECT 38-26-0104DATE 26 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerDRILL RIG Acker IIBORE HOLE 5

Page 1 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
5		Gravel, reddish in color	Fairly dry
		Medium brown, silty sand	
	MB	Tan silty sand with some clay	
	MB	Brown fine sand silt	
	MB	Brick red fine silty sand with some clay.	
10			
15	MB 14-16'	Tan silty fine sand with clay.	

001037

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
 DRILL RIG Acker II BORE HOLE 5
 Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
		Tan silty fine sand with clay	
20			
25			WT
30			Wet

DRILLING LOG

PROJECT 38-26-0104DATE 26 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerDRILL RIG Acker IIBORE HOLE 5

Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
35		Tan silty fine sand..with clay	
40			
45			

001039

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
DRILL RIG Acker II BORE HOLE 5

Page 4 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
45		Medium brown silty clay.	Hangs to auger.
50			
55			
60		Bottom of hole	Well depth 60 feet

DRILLING LOG

PROJECT 38-26-0104DATE 26 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerTop of bermDRILL RIG Acker IIBORE HOLE 6
Page 1 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Medium brown silty sand.	Moist
5	BS	Brown silty sand	
10	BS	Brick red silty clay with fine sand	
		Light tan silty fine sand with some clay.	Moist
	BS		
15			

001041

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of berm
DRILL RIG Acker II BORE HOLE 6
Page 2 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
20		Light tan silty fine sand with some clay.	Water
25			
		Light tan sandy silt	
30	BS 29-31 ft		Water

001042

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 28-26-0104DATE 26 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerTop of bermDRILL RIG Acker II

BORE HOLE

6
Page 3 of 4

DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
—	BS	Light tan sandy silt	
—			
—			
—			
—			
35 —			
—			
—			
—			
—			
40 —		Medium brown silty clay	
—			
—			
—			
—			
45 —			

001043

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 26 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
DRILL RIG Acker II BORE HOLE 6
Page 4 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
50		Gray fine sandy clay	Well depth
55			
60		BOTTOM OF HOLE	

US ARMY ENVIRONMENTAL HYGIENE AGENCY

001044

DRILLING LOG

PROJECT 38-26-0104

DATE 27 Jan 80

LOCATION Longhorn AAP

DRILLERS LT Corbitt, Mr. Kestner

Edge of Road

DRILL RIG Acker II

BORE HOLE 7
Page 1 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Medium brown silty sand	
		Tan silty sand, fine	Moist Moist
5	BS		
10	BS		
15			Water

001045

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104DATE 27 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerEdge of RoadDRILL RIG Acker IIBORE HOLE 7

Page 2 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
	BS	Tan silty sand, fine	Moist
20			
30			Water
35			

DRILLING LOG

PROJECT 38-26-0104 DATE 27 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Edge of Road
 DRILL RIG Acker II BORE HOLE 7
Page 3 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Tan silty sand, fine	Moist
40		Tan fine silty sand w clay	
45		Gray fine sandy clay	
50		BOTTOM OF HOLE	

001047

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 27 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Edge of Road
DRILL RIG Acker II BORE HOLE 7
Page 4 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
55			
60			Well depth

US ARMY ENVIRONMENTAL HYGIENE AGENCY

001048

DRILLING LOG

PROJECT 38-26-0104

DATE 27 Jan 80

LOCATION Longhorn AAP

DRILLERS LT Corbitt, Mr. Kestner

Top of Berm

DRILL RIG Acker II

BORE HOLE 8
Page 1 of 4

FEET DEPTH	SAMPLE TYPE BLOWS PER 6 IN	DESCRIPTION	REMARKS
5		Medium Brown silty sand; some clay	Moist
	MB		
10		Brown fine silty sand	
	MB		
15		Tan fine silty sand w some clay	

001045

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104DATE 27 Jan 80LOCATION Longhorn AAPDRILLERS LT Corbitt, Mr. KestnerTop of BermDRILL RIG Acker IIBORE HOLE 8

Page 2 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
20	MB	Tan fine silty sand, w some clay	Wet
25	MB	Medium to fine sandy silt	Wet Water
30			

DRILLING LOG

PROJECT 38-26-0104 DATE 27 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 8
 Page 3 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
40			
45		Tan silty clay	
	MB		
50			

DRILLING LOG

PROJECT 38-26-0104 DATE 27 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 8
 Page 4 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
55		Tan silty clay -	
		Gray sandy clay	
60		BOTTOM OF HOLE	Well depth

US ARMY ENVIRONMENTAL HYGIENE AGENCY

001052

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 9
 Page 1 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
		Tan fine silty sand "	
	MB		
5		Brown fine silty sand	
	MB		
10			
		Tan fine silty sand w some clay	
	MB		
15			

001053

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 9
 Page 2 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
		Tan fine silty sand w some clay	
	MB		
20			Wet
25			
			Water level
30			

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
DRILL RIG Acker II BORE HOLE 9
Page 3 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
35		Tan fine silty sand w some clay	
40			
45			

001055

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 9
 Page 4 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
		Tan fine silty sand w some clay	
		Brick red & gray silty clay	Wet
50			
			Well depth
55		Brown fine silty sand w clay	Dry
60		BOTTOM OF HOLE	

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
DRILL RIG Acker II BORE HOLE 10
Page 1 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
5		Brown silty sand --	Moist
10		Tan fine silty sand w some clay	Moist
15			

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
DRILL RIG Acker II BORE HOLE 10
Page 2 of 4

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DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
DRILL RIG Acker II BORE HOLE 10
Page 3 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN		
35			
40		Medium brown clay	
45			

001059

US ARMY ENVIRONMENTAL HYGIENE AGENCY

DRILLING LOG

PROJECT 38-26-0104 DATE 28 Jan 80
 LOCATION Longhorn AAP DRILLERS LT Corbitt, Mr. Kestner
Top of Berm
 DRILL RIG Acker II BORE HOLE 10
Page 4 of 4

FEET DEPTH	SAMPLE TYPE	DESCRIPTION	REMARKS
	BLOWS PER 6 IN.		
—	PB	Medium brown clay	Well depth
50			
55		BOTTOM OF HOLE	

PART II

TECHNICAL PROVISIONS

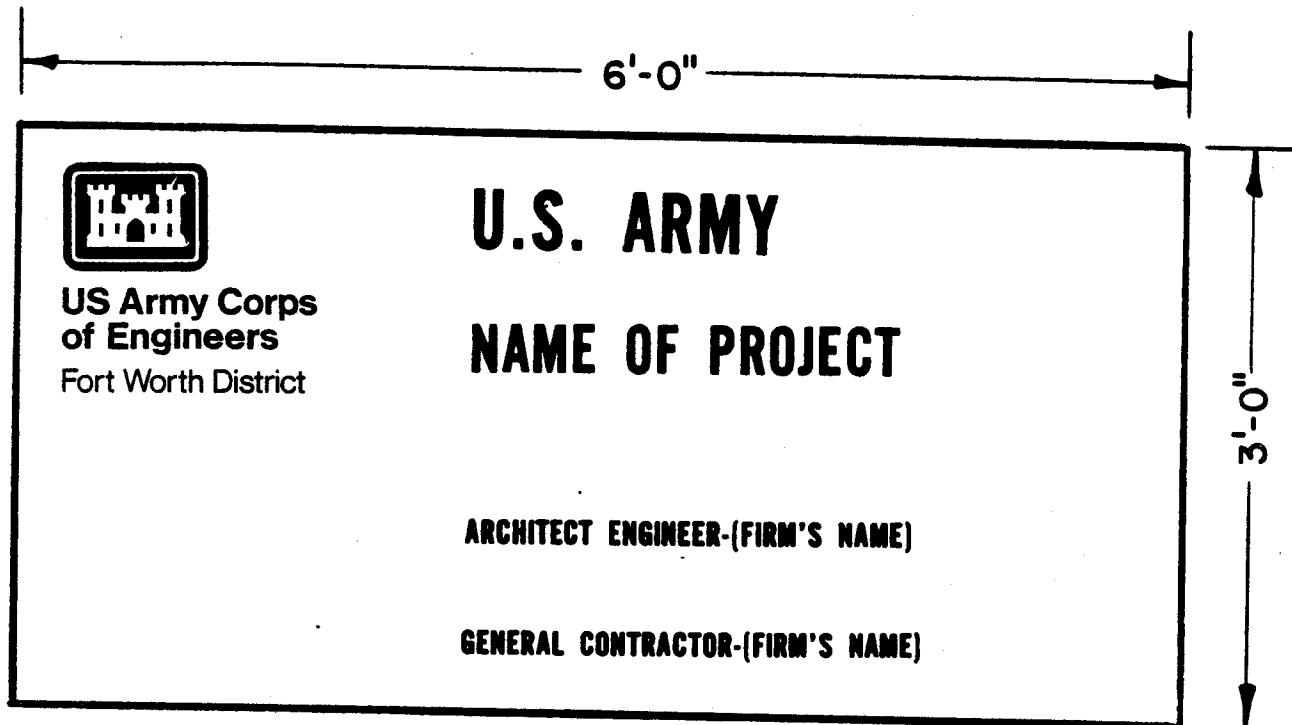
SECTION 1A - BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1. SCOPE: This section covers a project bulletin board, a project sign, and a project safety sign, complete.
2. GENERAL: Immediately upon beginning of work under this contract, the Contractor shall accomplish the work covered under this section of the specifications. Locations of the bulletin board, the project sign, and the project safety sign shall be as determined by the Contracting Officer.
3. BULLETIN BOARD: Immediately upon beginning of work under this contract, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 x 48 inches in size; for displaying the Equal Employment Opportunity Poster, a copy of the wage decision contained in the contract, Wage Rate Information Poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the site of work in a conspicuous place easily accessible to all employees as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work under the contract is complete. Upon completion of work under this contract the bulletin board shall be removed by and remain the property of the Contractor.
4. PROJECT SIGN: The Contractor shall furnish and erect a project sign in the location as hereinbefore specified. Details of construction shall be as shown on the drawings attached at the end of this section. The sign shall be constructed of 1/2-inch-thick, grade A-C, exterior type plywood. The sign shall receive 2 coats of an approved white, semigloss, exterior type enamel. Lettering shall be as shown on the drawings and shall be black semigloss, exterior type enamel. The Contractor shall furnish and apply a red decal of the Corps of Engineers' Castle, or may use a stencil in lieu of a decal provided the dimensions are the same. The decal, if used, shall receive a thin coat of clear spar varnish after application. If a stencil is used, the castle shall be painted with an approved red, semigloss, exterior type enamel. Upon completion of work under this contract, the project sign shall be removed from the job site and shall remain the property of the Contractor.
5. PROJECT SAFETY SIGN: The Contractor shall furnish and erect a project safety sign at the Contractor's field office. The safety sign shall be located in a conspicuous place easily within view of all employees and visitors as approved by the Contracting Officer. Details of construction shall be as shown on the drawings attached at the end of this section. The sign shall be constructed of 3/4-inch-thick, grade A-C, exterior-type plywood. The sign shall receive two coats of an approved white, semigloss, exterior type enamel. Lettering shall be as shown on the drawings and shall be semigloss, exterior type enamel of the colors noted on the drawings. The Contractor shall furnish and apply a red decal of the Corps of Engineers' Castle, or may use a stencil in lieu of a decal provided the dimensions are

the same. The decal, if used, shall receive a thin coat of clear spar varnish after application. If a stencil is used, the castle shall be painted with an approved red, semigloss, exterior type, enamel. The Contractor shall furnish a sufficient number of sign numbers to cover the length of the contract period and to keep both numbered spaces up to date. The Contractor shall keep the safety sign current by posting the numbers daily in both slots (lines 5 and 6 of sign). Numbers shall be red and the size indicated on the drawing and shall be of a weatherproof material. Upon completion of work under this contract, the project safety sign shall be removed from the Government-controlled land and remain the property of the Contractor.

6. PAYMENT: No separate payment will be made for the work covered under this section of the specifications and all costs in connection therewith will be considered as a subsidiary obligation of the Contractor, covered by the contract prices in this contract.

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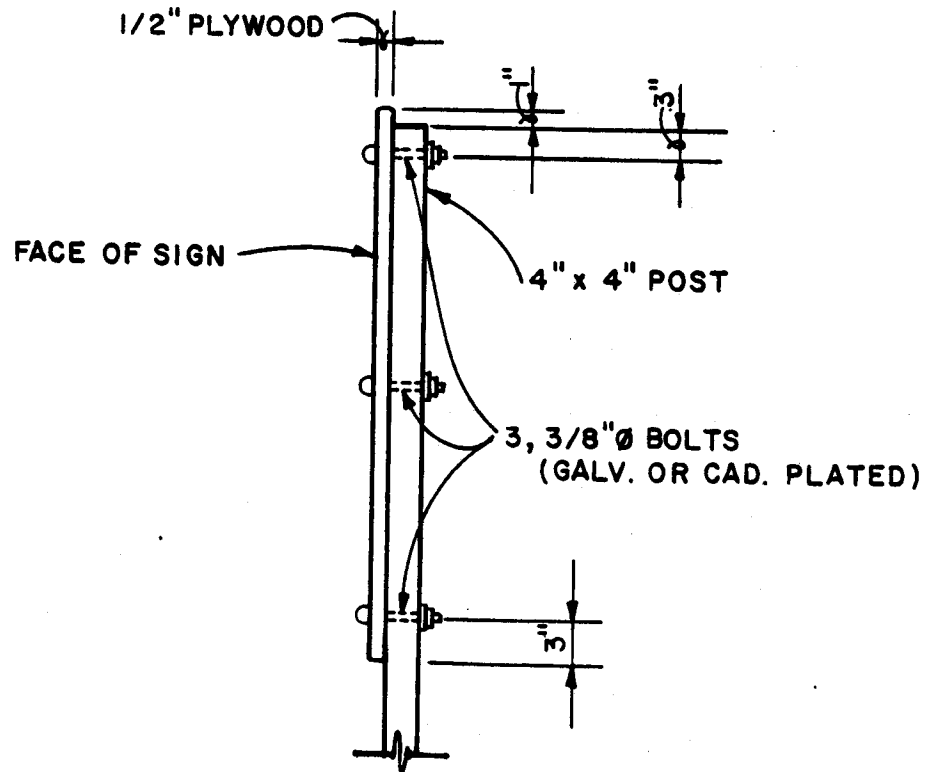
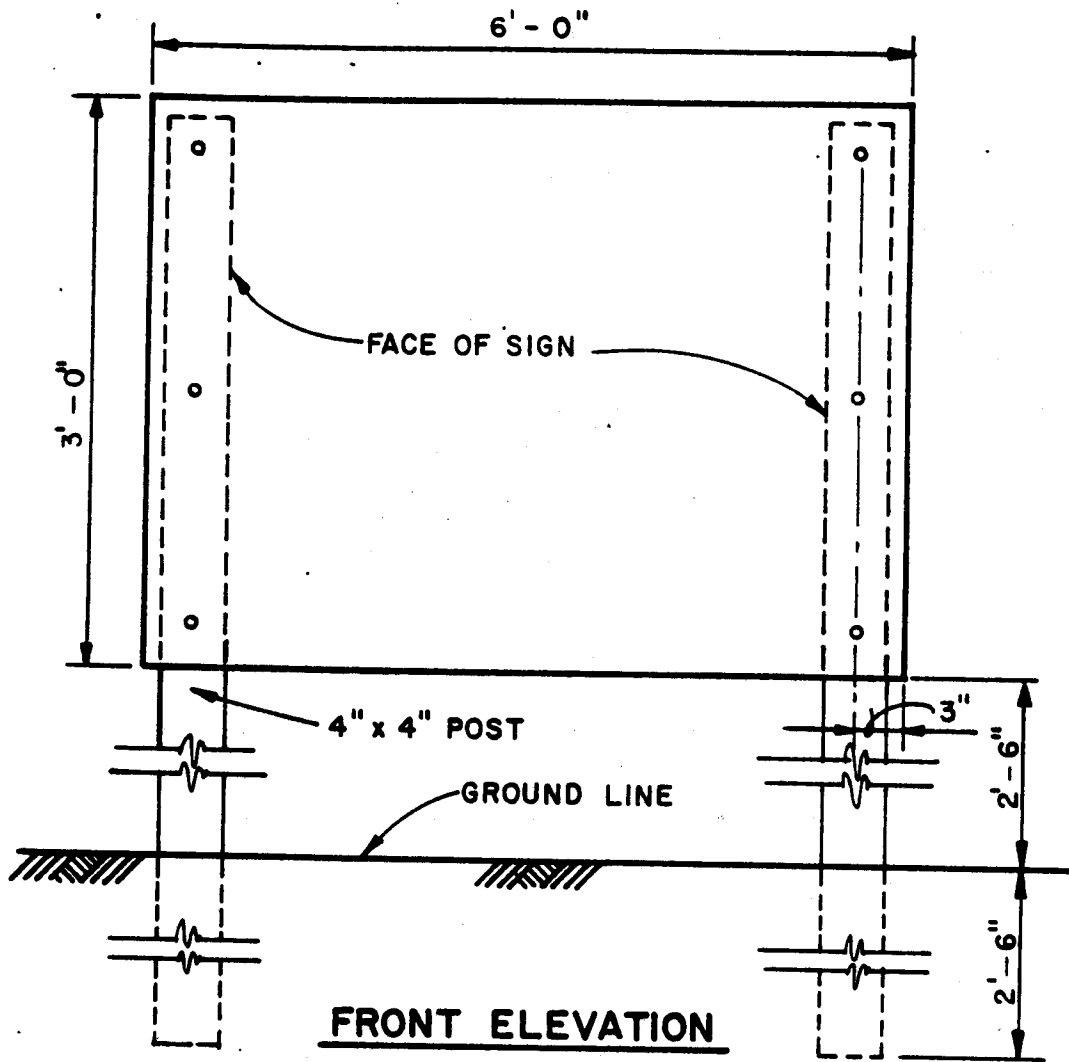


SCHEDULE

LINE	DESCRIPTION	LETTER HEIGHT	STROKE
1	U.S. ARMY	4"	3/4"
2	NAME OF PROJECT	3"	1/2"
3	U.S. ARMY CORPS OF ENGINEERS	1 3/4"	3/8"
4	FORT WORTH DISTRICT	1 1/2"	5/16"
5	CORPS OF ENGINEERS CASTLE (4" x 6")		
6	ARCHITECT ENGINEER-(FIRM'S NAME)	1 1/2"	1/4"
7	GENERAL CONTRACTOR-(FIRM'S NAME)	1 1/2"	1/4"

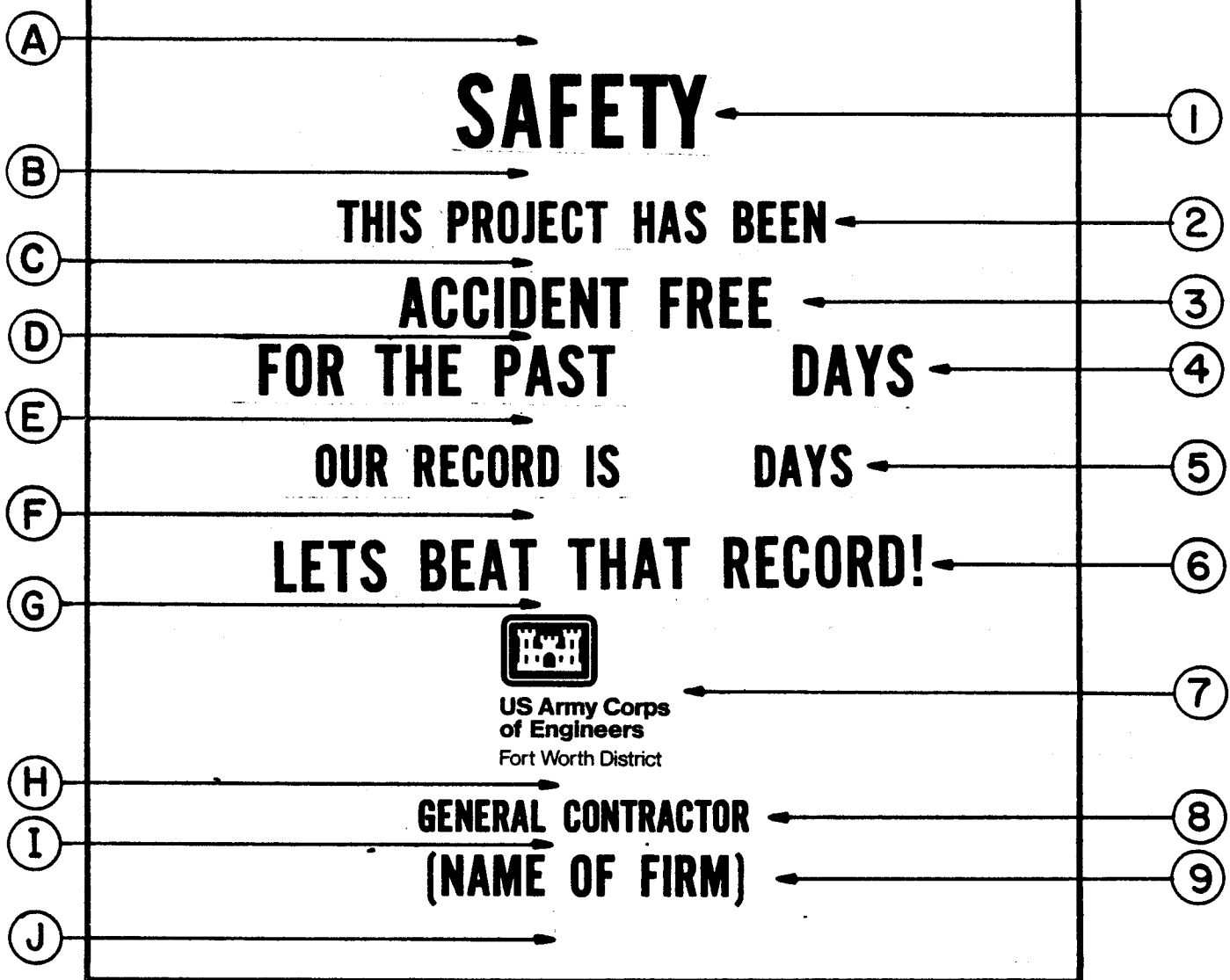
PROJECT SIGN LAYOUT

001063



PROJECT SIGN DETAILS

N.T.S.

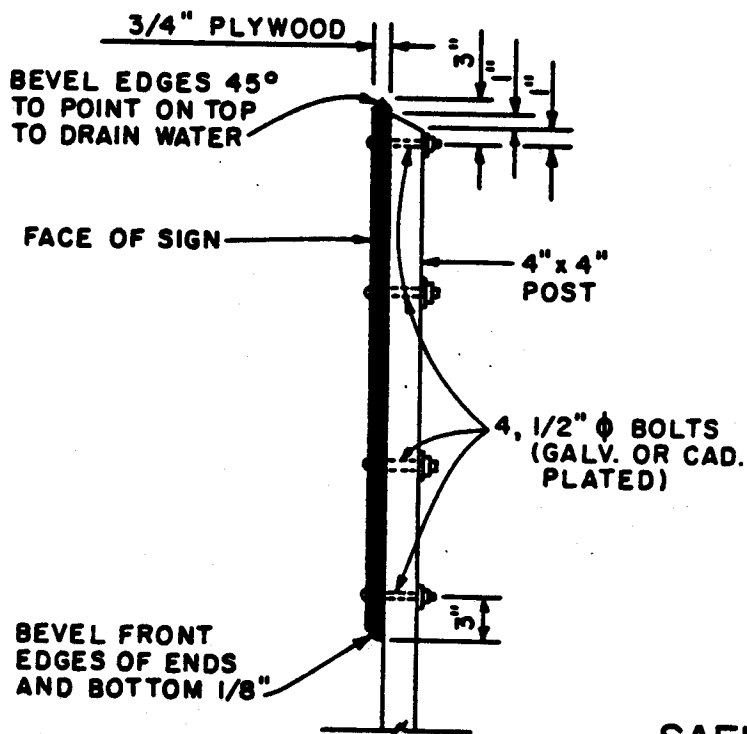
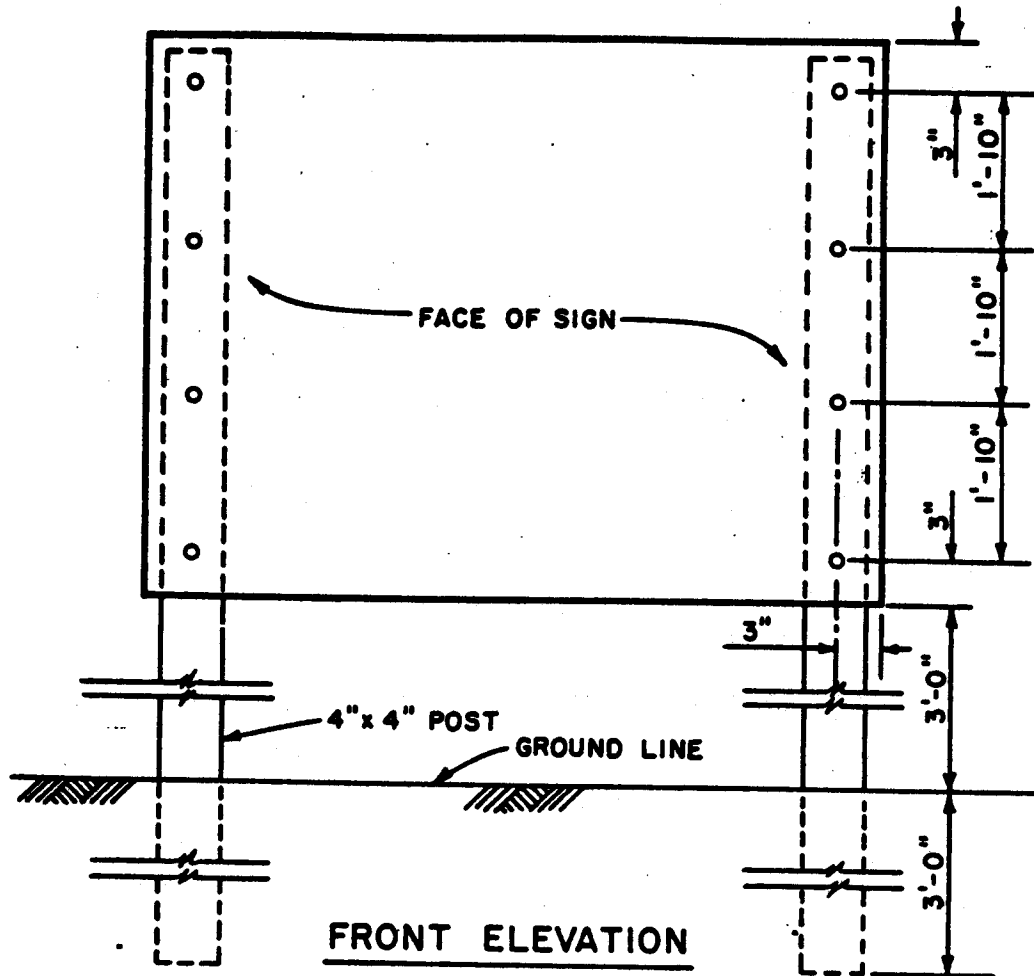
SCHEDULE

<u>SPACE</u>	<u>HEIGHT</u>	<u>LINE</u>	<u>LETTER HEIGHT</u>	<u>STROKE</u>	<u>COLOR</u>
(A)	5 1/2"	(1)	5"	1 1/4"	RED
(B)	4"	(2)	2 3/4"	1/2"	BLACK
(C)	1 1/2"	(3)	3 1/2"	3/4"	RED
(D)	1"	(4)	3 1/2"	3/4"	RED
(E)	3"	(5)	2 3/4"	1/2"	BLACK
(F)	3"	(6)	3 1/2"	3/4"	BLACK
(G)	4"	(7) (CASTLE)	(6"x10")		RED
1" SPACE BETWEEN CASTLE & LETTERING		US ARMY CORPS	2"	3/8"	BLACK
		OF ENG			
		FORT WORTH DISTRICT			
(H)	4"	(8)	2"	1/4"	BLACK
(I)	2 1/2"	(9)	2 1/2"	3/8"	BLACK
(J)	5 1/2"				

NOTE: Lettering styles to be similar to those illustrated

PROJECT SAFETY SIGN LAYOUT

001065



SIDE ELEVATION

SAFETY SIGN
DETAILS

PART II

TECHNICAL PROVISIONS

SECTION 1B - CONTRACTOR QUALITY CONTROL SYSTEM

1. SCOPE: This section covers the quality control inspection, sampling and testing of all supplies, services, and/or workmanship required to be performed by the contract drawings, specifications, and requirements. The Contractor shall perform all quality control inspection and/or testing required by this contract (unless specifically designated in this section to be performed by the Government) and shall review and certify that each submittal is correct and in strict conformance with the contract drawings and specifications for all shop drawings and lists of materials, fixtures, and equipment.

2. INSPECTION AND TESTING: The Contractor shall inspect and test all materials and operations, including but not limited to the following:

(1) Bulletin board, project sign, building signs, and project safety sign:

(a) Inspection as to type, size, and incorporation of provisions set forth in contract.

(b) Maintenance throughout contract.

(2) Environment protection:

(a) Location of construction and storage buildings.

(b) Erosion control.

(c) Restoration of temporary construction areas.

(d) Water pollution control.

(e) Protection of wildlife.

(f) Dust control.

(g) Janitor services.

(h) Recording and preserving archeological finds.

(3) Demolition:

(a) Extent of material removal and demolition.

(b) Disposition of salvage material and scrap.

(c) Cleanup.

- (4) Removal and disposal of sludge mud contaminated soil:
 - (a) Limits of excavation.
 - (b) Soil tests as required.
 - (c) Disposal of contaminated materials.
- (5) Excavation, and filling (earthwork): Tests and testing frequencies are specified in SECTION: EARTHWORK.
- (6) Subdrainage system:
 - (a) Materials conformance.
 - (b) Excavation, trenching and bedding.
 - (c) Placement of pipe.
 - (d) Compaction tests on backfill. (Testing frequencies shall conform to paragraph: Excavation and Filling (Earthwork)).
 - (e) Density test: One per 300 linear feet of trench each 12-inch lift of compacted material or fraction thereof.
 - (f) Disposition of excessive materials.
- (7) Disassembly:
 - (a) Disconnection of utilities and removal.
 - (b) Extent of material removal and demolition.
 - (c) Packing and storage of salvaged items.
- (8) Fence, chain-link:
 - (a) Removal and protection of existing fence.
 - (b) New material conformance.
 - (c) Reinstallation of existing fence, and installation of new fencing as required.
- (9) Establishment of turf:
 - (a) Materials conformance.
 - (b) Equipment adequacy.
 - (c) Preparation of area to be turfed.
 - (d) Application of fertilizer.

- (e) Tillage.
- (f) Planting.
- (g) Mulching and maintenance, as required.

3. REVIEW AND APPROVAL OF SHOP DRAWINGS, MATERIALS, FIXTURES, AND EQUIPMENT:

3.1 The Contractor shall review and certify (by signing ENG Form 4025) that all shop drawings, lists of materials, fixtures, and equipment as called for under the various headings of these specifications are correct and in strict compliance with the contract drawings and specifications. These drawings and lists shall be accurate, complete, and adequately detailed. The top copy of the data or drawings comprising each Item listed on the transmittal form (ENG Form 4025) shall be identified as having received the Contractor's approval by being so stamped, signed, and dated. Approval of shop drawings, materials, fixtures, and equipment by the Contractor will not relieve him of the responsibility for any errors which may exist and the Contractor shall be responsible for the satisfactory construction of all work. All samples of materials submitted as required by these specifications shall be properly identified and labeled for ready identification, and upon being approved, stored at the site of the work for jobsite use until all work has been completed and accepted by the Contracting Officer. The Contractor shall provide four (4) sets of all shop drawings.

3.2 All proposed deviations requested by the Contractor shall be noted in the "Remarks" column of the ENG Form 4025. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the shop drawing. The Government reserves the right to rescind inadvertent approval of shop drawings containing unnoted deviations.

3.3 Approval by the Contractor, as required by subparagraph 3.1, shall be accomplished by stamping shop drawings with a stamp similar to the following:

CONTRACTOR
(Firm Name)

☐ Approved.

☐ Approved with corrections as noted on shop drawings and/or attached sheet(s).

SIGNATURE: _____
TITLE: _____
DATE: _____

4. DAILY RECORDS: The Contractor's Quality Control Inspectors shall maintain a daily record of all inspections and tests performed for each shift of Contractor or Subcontractor operations on an appropriate format. These records shall not only identify the project but shall include data on weather conditions and any delay to the job attributable to such weather conditions, the Contractor and/or Subcontractor working with labor count for each and their respective areas of responsibility, and a listing of construction equipment, other than hand tools, at the job site and whether or not used on the report day. In addition, these records shall provide factual evidence that continuous quality control inspections and tests have been performed, including but not limited to the following: type and number of inspections or tests involved; results of inspections or tests including all computations; nature of defects; causes for rejection; safety violations; proposed remedial action; and corrective action taken. These records shall cover both conforming and defective items and shall include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. The Contractor shall maintain a current record of all inspections and shall furnish to the Contracting Officer, on a daily basis, legible copies of all inspection records for his permanent retention. The daily records of inspections shall cover all work placement subsequent to the previous report, and shall be verified by the Contractor's designated representative. Samples of the minimum construction quality control report and the required preparatory and initial inspection checklists are included.

5. RECURRING DEFICIENCIES: If recurring deficiencies in an item or items being inspected by the Contractor indicate that the inspection system is not providing adequate quality control the Contractor shall take such corrective measures as deemed necessary by the Contracting Officer.

6. PAYMENT: No separate payment will be made for the Contractor's quality control inspection performed under this contract, and all costs in connection therewith will be considered a subsidiary obligation of the Contractor.

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(Sample of typical Contractor Quality Control Report)

CONTRACTOR'S NAME
(Address)

DAILY CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract No.: _____

Description and Location of work: _____

WEATHER: (Clear) (P. Cloudy) (Cloudy); Temperature: _____ Min. _____ Max;
Rainfall _____ inches.

Contractor/Subcontractors and Area of Responsibility with Labor Count for Each

- a. _____
- b. _____
- c. _____
- d. _____

Equipment Data: (Indicate items of construction equipment, other than hand tools, at the job site, and whether or not used.)

1. Work Performed Today: (Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above.)

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

a. Preparatory Inspection:

b. Initial Inspection:

c. Follow-up Inspections:

-
3. Test Required by Plans and/or Specifications Performed and Results of Tests:

4. Verbal Instructions Received: (List any instructions given by Government personnel on construction deficiencies, retesting required, etc., with action to be taken.)

5. Remarks: (Cover any conflicts in plans, specifications, or instructions or any delay to the job attributable to weather conditions.)

6. Results of Safety Inspection: (Include safety violations and corrective actions taken.)

Contractor's Inspector

CONTRACTOR'S VERIFICATION: The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

Contractor's Approved Authorized Representative

PREPARATORY INSPECTION CHECKLISTContract No.: DACA63-

DATE: _____

Title: _____

Specs. Section: _____

MAJOR DEFINABLE SEGMENT OF WORK: _____

A. PERSONNEL PRESENT:

<u>NAME</u>	<u>POSITION</u>	<u>COMPANY</u>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

(List additional personnel on reverse side)

B. TRANSMITTALS INVOLVED:

<u>NUMBER & ITEM</u>	<u>CODE</u>	<u>CONTRACTOR OR GOVERNMENT APPROVAL</u>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____

B-I. Have all items involved been approved?

Yes _____ No _____

B-II. What items have not been approved?

<u>ITEM</u>	<u>STATUS</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

C. ARE ALL MATERIALS ON HAND? Yes _____ No _____

C-I. Are all materials on hand in accordance with approvals? Yes _____ No _____

C-II. Items not on hand or not in accordance with transmittals:

1. _____
2. _____
3. _____
4. _____

D. TESTS REQUIRED IN ACCORDANCE WITH CONTRACT REQUIREMENTS:

<u>TEST</u>	<u>PARAGRAPH</u>
1. _____	_____
2. _____	_____
3. _____	_____

E. ACCIDENT PREVENTION PREPLANNING - HAZARD CONTROL MEASURES:

E-I. Applicable Outlines (Attach completed copies):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

E-II. Operational Equipment Checklists (SWF 1191J or 1192J):

ATTACHED FOR:

1. _____
2. _____
3. _____

ON FILE FOR:

1. _____
2. _____
3. _____

QUALITY CONTROL - PRIME CONTRACTOR

QUALITY CONTROL - WORK INVOLVED

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INITIAL INSPECTION CHECKLISTContract No.: DACA63-

DATE: _____

Discription and Location of Work Inspected: _____

Specs. Section: _____

REFERENCE CONTRACT DRAWINGS: _____

A. PERSONNEL PRESENT:

<u>NAME</u>	<u>POSITION</u>	<u>COMPANY</u>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

B. MATERIALS BEING USED ARE IN STRICT COMPLIANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. YES _____ NO _____

IF NOT, EXPLAIN: _____

C. PROCEDURES AND/OR WORK METHODS WITNESSED ARE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. YES _____ NO _____

IF NOT, EXPLAIN: _____

D. WORKMANSHIP IS ACCEPTABLE. YES _____ NO _____ STATE AREAS WHERE IMPROVEMENT IS NEEDED: _____

E. SAFETY VIOLATIONS AND CORRECTION ACTION TAKEN: _____

QUALITY CONTROL REPRESENTATIVE

TECHNICAL PROVISIONS

SECTION 1C - WARRANTY OF CONSTRUCTION

1. WARRANTY OF CONSTRUCTION (APR 1984)(FAR 52.246.21)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) 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. Contractors must provide either their own local service facility or a local licensed bonded company which is authorized to perform or direct the performance of warranty work in behalf of the Contractor. The Contractor shall furnish a warranty of construction Performance Bond as required in the Special Contract Clause CONTRACTOR QUALITY CONTROL SYSTEM.

(b) The warranty shall continue for a period of one (1) year from the date of final acceptance of the work or the date of receipt, by the Contracting Officer, of all operation and maintenance manuals and instructions, spare parts data and lists, spare parts, special tools and inventories of installed property as required by this contract, whichever occurs later.

(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.

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

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

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

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

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

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

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

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

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PART II

TECHNICAL PROVISIONS

SECTION 1D - ADDITIONAL SAFETY REQUIREMENTS

1. GENERAL SAFETY REQUIREMENTS

1.1 Employee Instruction and Training:

1.1.1 General:

1.1.1.1 The Contractor shall be responsible for initiating and maintaining a safety and health program which will comply with the Corps of Engineers' Safety and Health Requirements, Manual EM-385-1-1 and additional requirements contained herein.

1.1.1.2 Prior to commencement of work at a job site, an acceptable accident prevention program written by the prime contractor for the specific work and implementing in detail the pertinent requirements of EM-385-1-1, will be reviewed by designated Government personnel. The Contractor's program will include work to be performed by subcontractors, and measures to be taken by the Contractor to control hazards associated with materials, services, or equipment provided by suppliers.

1.1.1.3 The accident prevention program shall provide for frequent and regular safety inspections of the work sites, materials, and equipment by competent persons.

1.1.1.4 Prior to the start of a project or any major phase of work, a job hazards analysis developed by the prime contractor will be reviewed with designated Government personnel. The analysis will identify and evaluate the hazards and outline the proposed methods and techniques of accomplishing each phase of work in a safe manner.

1.2 Indoctrination:

1.2.1 Each employee shall be provided initial indoctrination and such continued training to enable him/her to perform his/her work in a safe manner.

1.2.2 Indoctrination and training shall be based on the safety program of the Contractor and shall include, but not be limited to, the following:

1.2.2.1 General safety policy and pertinent provisions of EM 385-1-1.

1.2.2.2 Requirements for employee and project safety.

1.2.2.3 Employee's responsibilities for property and the safety of others.

1.2.2.4 Employee's responsibilities for reporting all accidents.

1.2.2.5 Medical facilities and required treatment.

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1.2.2.6 Procedures for reporting or correcting unsafe conditions or practices.

1.2.2.7 Safe Clearance Procedures.

1.2.2.8 Fire fighting and other emergency procedures.

1.2.2.9 Job hazard analysis.

1.3 On-the-Job:

1.3.1 Regularly scheduled safety meetings shall be held at least once a month for all supervisors on the project to review past activities, to plan ahead for new or changed operations, and establish safe working procedures for anticipated hazards. An outline report of each meeting shall be submitted to the designated authority.

1.3.2 At least one safety meeting shall be conducted weekly by field supervisors or foremen for all workers. An outline report of meeting giving date, time, attendance, subjects discussed and who conducted it shall be maintained and copies furnished the designated authority on request.

1.3.3 All persons required to enter into confined or enclosed spaces or atmospheres immediately dangerous to life shall be instructed as to the hazards involved and precautions to be taken. They shall be trained in the use and care of such emergency and protective equipment as self-contained breathing apparatus, hose line masks, and respirators. Training shall be by a qualified person. The employee shall comply with any regulations that apply to work in dangerous or potentially dangerous areas.

1.3.4 All persons required to handle or use poisons, caustics, or other harmful substances shall receive instruction regarding the safe handling, potential hazards, personal hygiene, protective equipment, disposal, and other protective measures involved or required.

1.3.5 All persons who may have to use rescue or lifesaving equipment shall be familiarized with the location of the equipment and shall be trained in its proper use.

1.3.6 All persons required to give or receive signals shall be instructed in and familiar with the proper use of the signal system.

1.3.7 All persons required to handle or use flammable liquids, gases, or toxic materials shall be instructed in the safe handling, storage, disposal, and use of these materials and specific requirements for protection.

1.3.8 The employer shall provide training in handling emergency situations that may arise in the use of any equipment on the project.

1.3.9 Heavy equipment operators shall receive instructions and shall demonstrate proficiency in the operation of the equipment.

1.3.10 When, in terms of time and distance, a medical facility, physician, or an employee qualified to administer first aid and CPR, is not reasonably accessible to a group of 2 or more employees for the treatment of

injuries, at least one employee shall be qualified to administer first aid and CPR.

1.3.11 A "Competent" or "Qualified" person means one who can identify existing and predictable hazards in the working environment which are dangerous to personnel and has the authority to promptly eliminate them. This person is one who, by degree, certificate, professional standing, or extensive knowledge, training and experience has demonstrated his/her ability to resolve problems related to the work.

1.4 Accident Reporting and Recordkeeping:

1.4.1 General:

1.4.1.1 The prime contractor shall be responsible for recording and reporting all accident exposure and experience incident to the work. (This includes exposure and experience of the prime contractor and his sub-contractors.) As a minimum these records shall include exposure work-hours and a log of occupational injuries and illnesses (OSHA Form 100F or equivalent). All diagnosed occupational illnesses and injuries that result in a fatality or a lost work day shall be investigated and reported to the designated authority in accordance with the requirements of the agency having jurisdiction.

1.4.1.2 The prime contractor shall keep a record of employee exposure to toxic materials and harmful physical agents. Also, the prime contractor shall notify the designated authority and the employee of any excessive exposure and the hazard control measures that will be taken.

1.4.1.3 An accident with any of the consequences listed below shall be immediately reported to the designated authority. These accidents will be investigated in depth to identify all causes and to recommend hazard control measures. Except for rescue and emergency measures, the accident scene shall not be disturbed until it has been released by the investigating official. The consequences requiring an in depth investigation are:

- a. Fatal injury.
- b. Five or more persons admitted to a hospital.
- c. Property damage in an amount specified by the designated authority.

1.4.1.4 A daily record of all first aid treatments not otherwise reportable shall be maintained on prescribed forms and furnished to the designated authority upon request.

1.4.1.5 Injured persons are responsible for reporting all injuries as soon as possible to their employer or immediate supervisor. No supervisor shall decline to accept a report of injury from a subordinate.

1.5 Loading, Transportation and Unloading of Hazardous Waste:

1.5.1 Loading:

1.5.1.1 The Contractor shall prepare and implement a specific site safety plan for loading of the hazardous waste material for transport to its final destination. The procedure shall address:

- a. Personnel Safety (see Section 2, Specific Site Safety Plan, of these specifications).
- b. Prevention of spills during the loading operation.
- c. Containment within the vehicle during transport.

1.5.1.2 The procedure shall be submitted for review by the Contracting Officer before implementation.

1.5.2 Transportation:

1.5.2.1 The Contractor shall assure that the transport vehicles are in good repair and that the drivers are well qualified in the operation of the transport vehicles. The waste material shall be completely contained within the transport vehicle; i.e., dump truck beds shall be completely covered with a tight fitting tarpaulin. The utmost care shall be taken to avoid spills during the transportation process.

a. The hazardous waste transporter/contractor must have an EPA identification number (40 CFR 262.34).

b. The Construction Contractor will furnish the transporter/contractor with a properly executed manifest (40 CFR 260, Subpart B). This will require obtaining the proper Texas Waste Code Number(s) for the hazardous waste shipment from the Permits Division of the TDWR.

c. The transporter/contractor has the responsibilities in handling the manifest during transport (49 CFR 172.205)).

d. The Construction Contractor will furnish the transporter/contractor with the appropriate placards prior to transport (40 CFR 262.33 and 49 CFR 172, Subpart F).

e. The transporter/contractor has the responsibilities in affixing and displaying placards during the transport (49 CFR 172, Subpart F).

1.5.2.2 A spill is defined as an act or omission through which waste or other substances are deposited where, unless controlled or removed, they will drain, seep, run, or otherwise enter into the water.

1.5.2.3 Handling Spills: The Contractor shall be responsible for familiarizing him/her self with the requirements of the authority having jurisdiction in each state through which the waste is transported. The following procedure is suggested as a guide line and in no way shall relieve the Contractor from adhering to the requirements of the authority having jurisdiction concerning spills:

a. Discovery and Notification:

(1) The Texas Department of Water Resources (TDWR) will be notified immediately in the event of a hazardous waste spill. Additionally, Longhorn Army Ammunition Plant is to be notified immediately upon completion of notification of the TDWR of a hazardous waste spill. The telephone numbers for Longhorn Army Ammunition Plant spill notification are:

Plant Commander	214-679-2100
Plant Environmental Coordinator	214-679-2613
Plant Manager	214-679-2111
Contractor Environmental Coordinator	214-679-2804

(a) Name and telephone number of reporter;

(b) where known, the name, address, and telephone number of the party in charge of, or responsible for, the activity or facility and of the party at the site of the spill or accidental discharge who is in charge of operations at the site;

(c) the exact location of the spill or discharge, including the name of the waters involved;

(d) Time and type of incident (e.g., fire, explosion, etc.);

(e) the type of material spilled or discharged;

1.5.2.4 Unloading:

a. The Contractor shall comply with the unloading procedures of the facility at the final destination.

2. SPECIFIC SITE SAFETY PLAN

2.1 Background: A hazardous waste special study by the U.S. Army Environmental hygiene agency concluded that the sludge layer (sludge) in the UEP was nonhazardous with respect to extraction procedure (EP) toxicity for heavy metals. In addition, the sludge did not exhibit the descriptive resource conservation and recovery act (RCRA) characteristics of ignitability or reactivity for nonliquids. The analysis of a composite floating material sample indicated that there existed a borderline test for EP toxicity for the heavy metal barium. The aqueous layer (water) in the UEP shall be removed by others before work on this contract is started. It cannot be determined as to whether or not the floating material will be removed with the water or left in the UEP with the other sludge. Therefore, the sludge must be considered as hazardous with EP toxicity for barium.

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2.1.1 Soluble Barium Compounds: The general guidelines contained herein apply to all soluble barium compounds. Physical and chemical properties of several specific compounds are provided for illustrative purposes.

2.1.1.1 Substance Identification:

a. Barium Nitrate:

- (1) Formula: $\text{Ba}(\text{NO}_3)_2$
- (2) Synonyms: None
- (3) Appearance and Odor: Odorless White Solid

b. Barium Oxide:

- (1) Formula: BaO
- (2) Synonyms: None
- (3) Appearance and Odor: Odorless White Solid

c. Barium Carbonate:

- (1) Formula: BaCO_3
- (2) Synonyms: None
- (3) Appearance and Odor: Odorless White Solid

d. Barium Chloride:

- (1) Formula: BaCl_2
- (2) Synonyms: None
- (3) Appearance and Odor: Odorless White Solid

2.1.1.2 Permissible Exposure Limit (PEL): The current OSHA standard for soluble barium compounds is 0.5 milligram of soluble barium compounds per cubic meter of air (mg/m^3) averaged over an eight-hour work shift.

2.1.1.3 Health Hazard Information:

a. Routes of Exposure: Soluble barium compounds can affect the body if they are inhaled or if they come in contact with the eyes or skin. They can also affect the body if they are swallowed.

b. Effects of Overexposure:

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(1) Short-term Exposure: Soluble barium compounds may cause local irritation of the eyes, nose, throat, bronchial tubes, and skin. Soluble barium compounds may also cause severe stomach pains, slow pulse rate, irregular heart beat, ringing of the ears, dizziness, convulsions, and muscle spasms. Death may occur.

(2) Long-term Exposure: None known.

(3) Reporting Signs and Symptoms: A physician should be contacted if anyone develops any signs or symptoms and suspects that they are caused by exposure to soluble barium compounds.

c. Recommended Medical Surveillance: The following medical procedures should be made available to each employee who is exposed to soluble barium compounds at potentially hazardous levels:

(1) Initial Medical Examination:

(a) A complete history and physical examination: The purpose is to detect pre-existing conditions that might place the exposed employee at increased risk, and to establish a baseline for future health monitoring. Examination of the heart, lungs, and nervous system should be stressed. The skin should be examined for evidence of chronic disorders.

(b) 14" x 17" chest roentgenogram: Soluble barium compounds cause human lung damage. Surveillance of the lungs is indicated.

(c) Soluble barium compounds are respiratory irritants. Persons with impaired pulmonary function may be at increased risk from exposure.

(d) Electrocardiogram: Barium compounds may cause cardiac arrhythmias and may have a direct effect on the cardiac muscle. Periodic surveillance of the heart is indicated.

(2) Periodic Medical Examination: The aforementioned medical examinations should be repeated on an annual basis, except that an x-ray is necessary only when indicated by the results of pulmonary function testing, or by signs and symptoms of respiratory disease.

d. Summary of Toxicology: Soluble barium salts cause severe gastroenteritis and systemic effects by ingestion. Intravenous injection of barium compounds in animals causes a strong, prolonged stimulation of muscle resulting in hyperperistalsis, bladder contraction, vasoconstriction, and irregular contraction of the heart followed by arrest in systole. Animals also exhibit stimulation of the central nervous system followed by paralysis. Ingestion of barium carbonate by humans causes gastroenteritis, muscular paralysis, slow pulse rate, extrasystoles, and hypokalemia. Heavy industrial exposure to dusts of barium sulfate or barium oxides may produce a benign pneumoconiosis, termed baritosis. It results in no impairment of ventilatory function, although signs of mild bronchial irritation may occur. Characteristic x-ray changes are those of small, dense, circumscribed nodules evenly distributed throughout the lung fields, reflecting the

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radio-opacity of the barium dust. Bronchial irritation has been reported from the inhalation of barium carbonate dust. Barium hydroxide and barium oxide are strongly alkaline in aqueous solution, causing severe burns of the eye and irritation of the skin.

e. Reactivity:

(1) Conditions contributing to instability: For barium nitrate, elevated temperatures may cause melting and decomposition; for the other compounds, none hazardous.

(2) Incompatibilities: Contact of barium oxide with water, carbon dioxide, or hydrogen sulfide may cause fires and explosions. Contact of barium carbonate with acids causes formation of carbon dioxide gas that may cause suffocation in enclosed spaces. Contact of barium nitrate with organic matter and combustible materials may cause fires and explosions.

(3) Hazardous decomposition products: Toxic gases and vapors (such as oxides of nitrogen and carbon monoxide) may be released in a fire involving barium nitrate.

(4) Special precautions: None

f. Flammability:

(1) Flash Point: Not applicable

(2) Autoignition temperature: For barium nitrate, data not available; for the other compounds, not applicable.

(3) Flammable limits in air, % by volume: Not applicable

(4) Extinguishant: Large amounts of water should be used on adjacent fires.

g. Warning properties: Barium chloride causes considerable iritis, which subsides in a few days. Barium oxide is capable of causing severe alkali burns of the eye, similar to those produced by calcium hydroxide.

2.1.1.4 Monitoring and Measurement Procedures:

a. General: Measurements to determine employee exposure are best taken so that the average eight-hour exposure is based on a single eight-hour sample or on two four-hour samples. Several short-time interval samples (up to 30 minutes) may also be used to determine the average exposure level. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

b. Method: Sampling and analyses may be performed by collection on a cellulose membrane filter followed by leaching in hot water, solution of sample in acid, and analysis in an atomic absorption spectrophotometer. An analytical method for soluble barium compounds is in the NIOSH Manual of Analytical Methods, 2nd Ed., Vol. 3, 1977, available from the Government Printing Office, Washington, D.C. 20402 (GPO No. 017-033-00261-4).

2.1.1.5 Respirators:

a. Good industrial hygiene practices recommend that engineering controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not technically feasible, when such controls are in the process of being installed, or when they fail and need to be supplemented. Respirators may also be used for operations which require entry into tanks or closed vessels, and in emergency situations. If the use of respirators is necessary, the only respirators permitted are those that have been approved by the Mine Safety and Health Administration (formerly Mining Enforcement and Safety Administration) or by the National Institute for Occupational Safety and Health.

b. In addition to respirator selection, a complete respiratory protection program should be instituted which includes regular training, maintenance, inspection, cleaning, and evaluation.

2.1.1.6 Personal Protective Equipment:

a. Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent repeated or prolonged skin contact with barium carbonate, barium chloride, barium nitrate, or liquids containing these compounds.

b. Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum) and other appropriate protective clothing necessary to prevent skin contact with barium oxide or liquids containing barium oxide, where skin contact may occur.

c. If employees' clothing has had any possibility of being contaminated with barium carbonate, barium chloride, barium nitrate, barium oxide, or liquids containing these compounds, employees should change into uncontaminated clothing before leaving the work premises.

d. Clothing contaminated with barium carbonate, barium chloride, barium nitrate, or barium oxide should be placed in closed containers for storage until it can be discarded or until provision is made for the removal of contaminant from the clothing. If the clothing is to be laundered or otherwise cleaned to remove the contaminant, the person performing the operation should be informed of contaminant's hazardous properties.

e. Where exposure of an employee's body to barium oxide or liquids containing barium oxide may occur, facilities for quick drenching of the body should be provided within the immediate work area for emergency use.

f. Non-impervious clothing which becomes contaminated with barium carbonate, barium chloride, barium nitrate, or barium oxide should be removed promptly and not reworn until the contaminant is removed from the clothing.

g. Employees should be provided with and required to use dust- and splash-proof goggles where there is any possibility of barium oxide or liquids containing barium oxide contacting the eyes.

h. Employees should be provided with and required to use dust- and splash-proof safety goggles where barium carbonate, barium chloride, barium nitrate, or liquids containing these compounds may contact the eyes.

i. Where there is any possibility that employees' eyes may be exposed to barium oxide or liquids containing barium oxide, an eye-wash fountain should be provided within the immediate work area for emergency use.

2.1.1.7 Sanitation:

a. Workers subject to skin contact with barium oxide or liquids containing barium oxide should wash any areas of the body which may have contacted barium oxide at the end of each work day.

b. Skin that becomes contaminated with barium carbonate, barium chloride, or barium nitrate should be promptly washed or showered to remove any contaminant. In the case of barium carbonate, employees should use soap or mild detergent and water for washing purposes.

c. Skin that becomes contaminated with barium oxide should be properly washed or showered to remove any barium oxide from the skin after all obvious amounts of barium oxide have been removed by other means (e.g., by use of oil or vaseline). Employees who are being burned by barium oxide should immediately utilize quick drenching facilities without first removing barium oxide by other means.

d. Eating and smoking should not be permitted in areas where solid barium carbonate, barium chloride, barium nitrate, or barium oxide, or liquids containing these compounds are handled, processed, or stored.

e. Employees who handle barium carbonate, barium chloride, barium nitrate, barium oxide, or liquids containing these compounds should wash their hands thoroughly before eating, smoking, or using toilet facilities. In the case of barium carbonate, employees should use soap or mild detergent and water for washing purposes.

2.1.1.8 Common Operations and Controls: The following list includes some common operations in which exposure to soluble barium compounds may occur and control methods which may be effective in each case:

<u>Operation</u>	<u>Controls</u>
Use in manufacture of photographic papers, dyes, and chemicals	Process enclosure; local exhaust ventilation
Use as pesticides, rodenticides, and disinfectants; <u>use in manufacture of explosives, matches, and pyrotechnics as igniter compositions and fireworks</u>	Process enclosure; local exhaust ventilation

2.1.1.9 Emergency First Aid Procedures: In the event of an emergency, institute first aid procedures and send for first aid or medical assistance.

a. Eye Exposure: If solutions of barium compounds get into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. Get medical attention immediately. Contact lenses should not be worn when working with these chemicals.

b. Skin Exposure: If solutions of barium compounds get on the skin, immediately flush the contaminated skin with water. If solutions of barium compounds soak through the clothing, remove the clothing immediately and flush the skin with water. If irritation persists after washing, get medical attention.

c. Breathing: If a person breathes in large amounts of soluble barium compounds, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

d. Swallowing: When soluble barium compounds have been swallowed and the person is conscious, give the person large quantities of water immediately. After the water has been swallowed, try to get the person to vomit by having him touch the back of his throat with his finger. Do not make an unconscious person vomit. Get medical attention immediately.

e. Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, notify someone else and put into effect the established emergency rescue procedures. Do not become a casualty. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

2.1.1.10 Spill and Disposal Procedures:

a. Persons not wearing protective equipment and clothing should be restricted from areas of spills until cleanup has been completed.

b. If soluble barium compounds are spilled, the following steps should be taken:

(1) Ventilate area of spill.

(2) Collect spilled material in the most convenient and safe manner and deposit in sealed containers for reclamation or for disposal in a secured sanitary landfill. Liquids containing soluble barium compounds should be absorbed in vermiculite, dry sand, earth, or a similar material.

c. Waste disposal method: Soluble barium compounds may be disposed of in sealed containers in a secured sanitary landfill.

2.2 Site Location:

2.2.1 Refer to contract drawing sheet G-2 for vicinity map. See sheet G-3 for the project area perimeter identification and existing geographic features.

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2.2.2 The UEP is contained inside a burning area which is fenced and has controlled access. The controlled access is administered by a staffed guard house that must be approached for permission to enter at all times. Certain clear distances must be maintained from burning sites, buildings, and structures within the burning area at all times. Also, entry to the burning area may be denied at certain times due to burning operations. It shall be the contractor's responsibility to familiarize himself with all safety and security requirements in the burning area and adjust his bid accordingly.

2.3 Site Layout: It shall be the Contractor's responsibility to prepare and submit for approval by the Contracting Officer a site map of the project work area. Every work site will have three basic areas - Exclusion, Contamination Reduction and Support. The Exclusion Area will be divided into up to four zones as determined by the degree of hazard present. When established standards or adequate site information are not available a minimum of Zone B will be established. All items listed in Paragraph 2.3.1 and 2.3.2 below will be displayed on the site map.

2.3.1 Determination of areas:

2.3.1.1 Exclusion Area: Criteria for determining zones are listed below. Protective equipment may be specified for workers in the Exclusion Area on the basis of location or operation or both.

a. Zone A: Maximum respiratory, skin, and eye protection is required.

(1) Where atmospheres have the potential to be immediately dangerous to life and health (IDLH)

(2) Atmospheric sampling indicates concentrations capable of being absorbed through the skin or eyes in toxic quantities or atmospheric concentrations of corrosives exist which could destroy skin.

(3) Skin contact with extremely hazardous substances (known or suspected to be on site) is possible.

b. Zone B: Maximum respiratory protection required and low probability of skin contact.

(1) Where atmospheric concentration of contaminant is known and the concentration of contaminants is greater than the protection factor for air purifying respirators or atmosphere is oxygen deficient (less than 19.5% oxygen).

(2) Contaminants absorbed through or toxic to skin are not present.

(3) Safeguards preclude splashing of contaminant on the skin or in eyes of individuals.

c. Zone C:

(1) Air contaminant levels are being monitored and do not exceed the protection factors of air purifying respirators.

(2) The contaminants have good warning properties.

(3) The contaminant is not known to be absorbed through or be toxic to skin.

(4) A reliable history of prior entry exists without acute or chronic effects on personnel.

d. Zone D: Can only be included inside the Exclusion Area if there is no Zone A or requirement for Level A protective equipment, and if there is no requirement for Zone B or Level B protection other than a restricted area with an oxygen deficient atmosphere.

(1) No known airborne hazards present and there is little or no potential for release of an airborne contaminant.

(2) Work function precludes splashing.

2.3.1.2 Contamination Reduction Area: Provides area to prevent the transfer of contaminants from the Exclusion Area to the Support Area, including personnel showers, change rooms, equipment decontamination.

2.3.1.3 Support Area: The outer area, considered to be clear of contamination, including vehicle parking, administrative areas, etc.

2.3.2 Access to existing roadways and any associated problems with access and egress to the site.

2.4 Personnel Protection:

2.4.1 The Contractor shall be responsible for determining and furnishing the necessary personnel protective equipment for each zone and area. Protective gloves, boots and suits shall be of material resistant to the chemicals present on the specific site. All respiratory protective equipment must be approved by NIOSH or MSHA.

2.4.1.1 Level A Protection. Required in Zone A

a. Positive-pressure demand type, air-supplied breathing apparatus

b. Fully encapsulating suit

c. Outer and inner gloves (both chemical-resistant)

d. Steel toe and shank boots

e. Hard Hat (under suit)

f. Options as required:

(1) Coveralls

(2) Long cotton underwear

(3) Disposable protective suit, gloves and boots, worn over fully encapsulating suit

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2.4.1.2 Level B Protection: Required in Zone B

- a. Positive pressure demand, air-supplied breathing apparatus
- b. Chemical-resistant clothing, long sleeves, one or two pieces, requirement for hood to be determined
- c. Outer and inner gloves (both chemical-resistant)
- d. Steel toe and shank boots
- e. Hard Hat
- f. Options as required
 - (1) Coveralls
 - (2) Disposable outer boots

2.4.1.3 Level C Protection: Required in Zone C

- a. Full-face piece, air-purifying, canister-equipped respirator
- b. Chemical-resistant clothing, long sleeves, one or two pieces, requirements for hood to be determined.
- c. Gloves
- d. Steel toe and shank boots
- e. Hard Hat
- f. Options as required
 - (1) Coveralls
 - (2) Inner chemical-resistant gloves
 - (3) Disposable outer boots
 - (4) Escape mask

2.4.1.4 Level D Protection: Required in Zone D and in the Contamination Reduction Area

- a. Coveralls
- b. Leather or chemical-resistant boots or shoes, steel toe and shank
- c. Hard Hat
- d. Options as required

- (1) Gloves
- (2) Disposable outer boots
- (3) Safety glasses or chemical splash goggles
- (4) Escape mask or respirator

2.4.2 Establishment of medical requirements and special tests for chemical exposure, if available. Frequency of exams and tests will be specified.

2.4.2.1 Preemployment medical examinations

2.4.2.2 Periodic medical examinations

2.4.2.3 Pretermination medical examinations

2.4.3 Work-rest schedules for each level of protective equipment considering the expected climate.

2.4.4 Heat or cold stress monitoring requirements and procedures.

2.5 Contaminant Monitoring: The Contractor shall devise and institute a procedure to monitor for contaminants taking into account specific methods, the frequency of testing, and the location for monitoring based on NIOSH approved methods where such procedures are available. Refer to 2.1.1.4 above for monitoring and measurement procedures for soluble barium compounds as an example. The monitoring program shall address the following:

2.5.1 Personnel Monitoring (Breathing Zone Samples):

2.5.1.1 High hazard operations

2.5.1.2 Hazardous site areas or zones

2.5.2 Area Monitoring

2.5.2.1 Atmospheric concentration of contaminants

2.5.2.2 Oxygen content

2.5.2.3 Explosive atmospheres

2.5.2.4 Radioactivity

2.6 Decontamination: As discussed above in Background, the sludge shall be considered as hazardous for soluble barium compounds. The fact that the sludge is highly alkaline is also important from a personnel decontamination standpoint.

2.6.1 Personnel Decontamination Procedures:

2.6.1.1 The discussion under 2.1.1.6, 2.1.1.7, and 2.1.1.9 covers the applicable personnel decontamination procedures.

2.6.2 Equipment Decontamination Procedures:

2.6.2.1 Provisions for equipment and machinery clean-up and washdown are covered under other provisions of these specifications.

2.6.3 "Scrap" Decontamination Procedures:

2.6.3.1 Any "scrap" generated by the UEP closure process shall be considered as hazardous waste and shall be transported with the sludge to its final destination.

2.7 Prevention of Contamination Spread: The Contractor shall monitor using applicable EPA procedures to prevent the spread of contamination as follows:

2.7.1 Wastewater: All wastewater generated by the Contractor (equipment washdown, etc.) during the UEP closure process shall be contained in the UEP and disposed in accordance with these specifications. Monitoring of the wastewater shall not be required.

2.7.2 Soil: Other provisions of these specifications require the removal of a certain amount of soil outside of the UEP and testing to determine the extent of the removal. Further monitoring is not required by this specification.

2.7.3 Groundwater: Various groundwater test wells are in place and are being monitored by others. No further monitoring is required by this particular specification. Any rainwater and/or groundwater that enters the UEP during the closure procedure shall be treated the same as the wastewater discussed in 2.7.1 above. It shall be disposed of at the expense of the Contractor.

2.7.4 Meteorological Monitoring: Meteorological monitoring shall not be required.

2.8 Communications: The Contractor shall provide and maintain communications as follows:

2.8.1 Communications on site compatible with protective equipment used.

2.8.2 Communications with on call emergency equipment.

2.9 Emergency Procedures: Establish a system of protocols and equipment necessary for emergency response procedures for occurrence of 2.9.1 through 2.9.5 below in each of the site areas and zones outlined in 2.3 above.

2.9.1 Chemical Exposure

2.9.2 Personal Injury

2.9.3 Potential or actual fire or explosion (including criteria for determining a hazard exists)

2.9.4 Environmental accident:

2.9.4.1 Spill control procedures

2.9.4.2 Information resources for emergency response

2.9.4.3 Reporting requirements

2.9.5 Radiation:

2.9.5.1 Criteria for determining hazard

2.9.5.2 Regulatory agency requirements

2.9.6 Identification of local and state emergency response personnel required on standby to support activities on site (fire department, police, hospital emergency room, others).

2.9.6.1 Level of expertise available

2.9.6.2 Emergency and personal protective equipment available

2.9.6.3 Training required for emergency personnel supporting site operations

2.9.7 Definition of interfaces between the Contractor, Corps representative, Morton Thiokol representative, and EPA On-Scene Coordinator for implementation of the EPA Community Protection Plan. The Community in this instance is Longhorn AAP and the EPA Community Protection Plan as such does not exist. The standing procedures of the Longhorn AAP security and safety offices of Morton Thiokol shall suffice. The Community Protection Plan (or its equivalent) is necessary to insure that adequate contingency planning has been done by all federal, state, and local agencies involved.

2.10 Training: The Contractor shall see that personnel will have either formal training or prior on-the-job training for those tasks they are assigned to perform. All unfamiliar operations will be rehearsed prior to performing the actual procedure. Additionally, an on-site orientation session must be developed covering the following subjects as a minimum:

2.10.1 Health effects and hazards of the chemicals identified or suspected to be on site. The basis for this discussion will be the background information and fact sheet prepared under Section 1.

2.10.2 Personnel Protection:

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2.10.2.1 Use, care and fitting of personnel protective equipment

2.10.2.2 Necessity for personnel protection, effectiveness and limitations of equipment

2.10.3 Decontamination Procedures

2.10.4 Prohibitions in areas and zones

2.10.4.1 Site Layout

2.10.4.2 Procedures for entry and exit of areas and zones

2.10.4.3 Use of lunch, break and shower facilities

2.10.5 Emergency procedures as identified in Section 2.9

2.10.6 Medical Requirements

3. ELECTRICAL WORK: Electrical work will not be performed on or near energized lines or equipment unless specified in the plans and specifications.

(a) Upon request by the Contractor, arrangements will be made for de-energizing lines and equipment so that work may be performed. All outages shall be requested through the authorized representative of the Contracting Officer a minimum of 14 days, unless otherwise specified, prior to the beginning of the requested outages. Dates and duration will be specified.

(b) Upon approval of the Contracting Officer's representative, the following work may be performed with the lines energized using certified hot line equipment, on lines above 600 volts, when the following conditions have been met.

(1) Work below the conductors no closer than the clearance required in EM385-1-1 from the energized conductors.

(2) Setting and connection of new pretrimmed poles in energized lines which do not replace an existing pole.

(3) Setting and removing transformers or other equipment on poles.

(4) Installation or removal of hot line connectors, jumpers, dead-end insulators for temporary isolation, etc., which are accomplished with hot line equipment from an insulated bucket truck.

(c) The Contractor shall submit a plan, in writing, describing his method of operation and the equipment to be used on energized lines. Proper certification from an approved source of the safe condition of all tools and equipment will be provided with the plan. The work will be planned and scheduled so that proper supervision is maintained. The Contractor will review his plan with the Contracting Officer's representative prior to being granted permission to perform the work.

(d) No work on lines greater than 600 volts will be performed from the pole or without the use of an insulated bucket truck.

(e) No work will be done on overbuilt lines while underbuilt lines are energized, except for temporary isolation and switching in accordance with 1b(4) hereinbefore.

4. ELECTRICAL TOOLS: Hand held electric tools shall be used only on circuits protected by ground fault circuit interrupters for protection of personnel.

5. EXTENSION CORDS: All general use extension cords will be of a type listed by Underwriters' Laboratories and will be classified as Type S, SO, ST, STO, STW, SE, SEO, or SEW, as described in Table 400-4 of the 1981 edition of the National Electric Code.

6. GROUNDING GENERATORS AND ARC WELDERS: Non-current carrying metal parts of all generators and arc welders shall be grounded.

7. ROLLOVER PROTECTIVE STRUCTURES:

(a) R.O.P.S. for rollers and compactors will be certified to meet SAE requirement J1040C.

(b) ROPS, as required by paragraph 18.B.20, EM 385-1-1, includes self-propelled pulverizers.

8. RADIATION PERMITS OR AUTHORIZATIONS:

(a) Contractors contemplating the use of radioactive materials or radiation producing equipment while performing work on this contract must obtain written authorization from the Department of the Army or Department of the Air Force, as applicable.

(b) A 45-day lead time should be programmed for obtaining this written authorization.

(c) When requested, the Contracting Officer's Authorized Representative will assist Contractor in obtaining the required permit or authorization.

9. SELF-PROPELLED ELEVATING WORK PLATFORMS:

All self-propelled elevating work platforms will be designed, constructed, maintained, used, and operated in accordance with the guidance provided in American National Standard for Self-Propelled Elevating Work Platforms (ANSI A92.6-1979) together with any amendments which may be in force at time contract is awarded.

10. LANGUAGE:

For each work group that has employees that do not speak English the Contractor will provide a bilingual foreman that is fluent in the language of the workers. The Contractor will implement the requirements of EM 385-1-1, para 01.B.01, 01.B.02, and 01.C.02 through these foremen.

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11. CRANE BOOM STOPS:

Reference, paragraph 18.C.19, EM 385-1-1. The referenced paragraph requires that boom stops possess the following features:

(a) Be directly connected to both the gantry or A-frame and boom chords, and

(b) Be designed to control vertical motion of the boom with gradually increasing resistance from 83 degrees or less without impact.

Crane boom stops which are indirectly connected to both the gantry or A-frame and boom chords and/or which engage the boom backstop with an impact do not meet the requirement.

12. REQUIREMENTS FOR ARMY AMMUNITION PLANTS AND ARSENALS:

(a) During all construction in areas contaminated with explosive material the Contractor shall comply with provisions of the U.S. Army Materiel Development and Readiness Command Manual DARCOM-R-385-100 dated 17 August 1981. (SWFPS)

(b) All 1975 and later automotive vehicles equipped with catalytic converters will not be allowed to enter hazardous or explosives operating areas. In other areas converter-equipped vehicles shall not be driven over or parked on a surface of easily combustible material such as dry grass.

(1) All vehicles equipped with catalytic converters shall be conspicuously marked in accordance with regulations at the installation.

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PART II

TECHNICAL PROVISIONS

SECTION 1E - ENVIRONMENTAL PROTECTION

1. SCOPE: The work covered by this section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution during and as the result of construction operations under this contract except for those measures set forth in other Technical Provisions of these specifications. For the purpose of this specification environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and involves noise, solid waste-management and management of radiant energy and radioactive materials, as well as other pollutants.
2. APPLICABLE REGULATIONS: In order to prevent, and to provide for abatement and control of, any environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, they shall comply with all applicable Federal, State, and local laws, and regulations concerning environmental pollution control and abatement, and all applicable provisions of the Corps of Engineers EM 385-1-1, entitled "Safety and Health Requirements Manual" as well as the specific requirements stated in this section and elsewhere in the contract specifications.
3. NOTIFICATION: The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to 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. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it was later determined that the Contractor was in compliance.
4. SUBCONTRACTORS: Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

5. IMPLEMENTATION: Prior to commencement of the work the Contractor will:

(1) submit in writing his proposals for implementing the provisions of this section and other sections of these specifications for environmental pollution control;

(2) meet with representatives of the Contracting Officer to develop mutual understandings relative to compliance with these provisions and administration of the environmental pollution control program.

6. PROTECTION OF LAND RESOURCES:

6.1 General: The land resources within the property of the Government but outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. Insofar as possible, the Contractor shall confine his construction activities to areas defined by the plans or specifications, to areas to be cleared for other operations, or to quarry, borrow or waste areas indicated on the plans. At the onset of borrow excavation, topsoil shall be saved for use in restoring the borrow area. Waste and borrow areas shall be leveled or trimmed to regular lines and shaped to provide a neat appearance. In all instances the restored area shall be well drained, so as to prevent the accumulation of stagnant water. The following additional requirements are intended to supplement and clarify the requirements of Contract Clauses entitled Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements; Operations and Storage Areas; and Cleaning Up.

6.2 Prevention of landscape defacement: Except in areas shown on the plans or specified to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without special authority from the Contracting Officer. Trees designated to be saved shall be protected from either excavation or filling within the root zone closer than the normal drip line of the tree. No ropes, cables, or guys shall be fastened to or attached to any existing trees for anchorages unless specifically authorized by the Contracting Officer. Where such special emergency use is permitted, the Contractor shall first adequately wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use. Where, in the opinion of the Contracting Officer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting, dumping, or other operations, he may direct the Contractor to protect adequately such trees by placing boards, planks, or poles around them. When earthwork operations are liable, in the opinion of the Contracting Officer, to cause rock to roll or otherwise be displaced into uncleared areas, the Contractor shall construct barriers to protect the trees. Rocks that are displaced into uncleared areas shall be removed. Monuments, markers, and works of art shall be protected similarly before beginning operations near them.

6.3 Restoration of landscape damage: Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Contracting Officer will decide what method of restoration shall be used, and whether damaged trees shall be treated or removed and disposed of under requirements for clearing and grubbing. All scars made on trees (not designated on the plans to be removed) by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted. Where tree climbing is necessary, the use of climbing spurs will not be permitted. The use of climbing ropes will be required by the Contracting Officer where deemed necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Contracting Officer, shall be immediately removed and replaced with a nursery-grown tree of the same species and size approved by the Contracting Officer.

6.4 Location of temporary field offices, storage, and other construction buildings: The location on Government property of the Contractor's temporary field office, storage, and other construction buildings, required temporarily in the performance of the work, shall be upon cleared portions of the job site or areas to be cleared, and shall require written approval of the Contracting Officer. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Plans showing temporary field office, storage, and other construction buildings shall be submitted for approval of the Contracting Officer. Where buildings or tent platforms are constructed on sidehills, the Contracting Officer may require cribbing to be used to obtain level foundations. Benching or leveling of earth may not be allowed, depending on the location of the proposed facility.

6.5 Temporary excavation and embankments: If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval at least thirty (30) days prior to scheduled start of such temporary work.

6.5.1 A layout of all temporary roads, excavations, and embankments to be constructed within the work area.

6.5.2 Details of road construction.

6.5.3 Details of the completed quarry or borrow excavation.

6.5.4 Plans and cross sections of proposed embankments and their foundations, including a description of proposed materials.

6.5.5 A landscaping plan prepared by a competent landscape architect showing the proposed restoration of the area. Removal of any necessary trees and shrubs outside the limits of required clearing or quarry, borrow, or waste areas shall be indicated. The plan shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The plan shall provide for the obliteration of construction scars as such and shall provide for a reasonably natural appearing final condition of the area. Modification of the Contractor's plans shall be made only with the written approval of the Contracting Officer. No unauthorized road construction, excavation or embankment construction (including disposal areas) will be permitted.

6.6 Post-construction cleanup or obliteration: The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction, as directed by the Contracting Officer. It is anticipated that excavation, filling, and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon. The disturbed areas shall be graded and filled as required, sufficient topsoil shall be spread to provide a minimum depth of 4 inches of suitable soil for the growth of grass, and the entire area seeded. Restoration to original contours is not required.

7. PROTECTION OF HISTORICAL AND ARCHEOLOGICAL RESOURCES:

7.1 Preservation of existing historical, archeological, and cultural resources: Any known existing historical, archeological and cultural resources within the Contractor's work area are designated on the contract drawings. The Contractor shall take precautions during this contract to preserve all resources as they existed at the time of contract award. The Contractor shall install all protective devices such as off limits markings, fencing, barricades or other devices as designated on the contract drawings and shall be responsible for preservation of the sites during this contract.

7.2 Recording and preserving historical and archeological finds: All items having any apparent historical or archeological interest outside of designated areas which are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall flag an area of 50 feet radius around the find, and shall immediately report the find to the Contracting Officer so that the proper authorities may be notified. Any work required to preserve or protect these finds will be accomplished by change order under the clause entitled Changes of the CONTRACT CLAUSES.

8. PROTECTION OF WATER RESOURCES:

8.1 General: The Contractor shall not pollute streams, lakes, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, construction wastes, or other harmful materials. It is the responsibility of the Contractor to investigate and comply with all applicable Federal, State, County, and Municipal laws concerning pollution of rivers and streams. All work under this contract shall be performed in such a manner that objectionable conditions will not be created in lakes, reservoirs, or streams through or adjacent to the project areas.

8.2 Erosion control: Prior to start of construction the Contractor shall submit a plan for approval of the Contracting Officer showing his scheme for controlling erosion and disposing of wastes. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds, or the areas shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures such as berms, dikes, drains, or sedimentation basins, if required to meet the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall be held to a minimum. Unless otherwise approved by the Contracting Officer, the Contractor shall apply as soon as practicable an approved temporary mulch on denuded ground. This shall apply to all areas not subject to appreciable traffic during construction, including areas that are to receive some form of construction later, if ground is to be exposed 60 days or more. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridge structures shall be installed. Any temporary culverts or bridge structures shall be removed upon completion of the project. Fills and waste areas shall be constructed by selective placement to eliminate to the extent practicable silts or clays on the surface that will erode and contaminate adjacent streams or lakes.

8.3 Spillages: Special measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and cement from entering streams, rivers, or lakes.

8.4 Disposal: Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in areas adjacent to streams shall be subject to the approval of the Contracting Officer. If any waste material is dumped in unauthorized areas the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed of as directed by the Contracting Officer, and replaced with suitable fill material, compacted and finished with topsoil all at the expense of the Contractor. Water from equipment wash down, rain fall run-off or ground water that is collected in the unlined evaporation pond shall in no case be discharged into a surface water course. Such water shall be disposed of in accordance with TECHNICAL PROVISIONS Section 2D.

9. PROTECTION OF FISH AND WILDLIFE: The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area which, in the opinion of the Contracting Officer, are critical to fish or wildlife. Fouling or polluting of water will not be permitted. Wash waters and wastes shall be processed, filtered, ponded, or otherwise treated prior to their release into a river or other body of water.

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10. JANITOR SERVICES: The Contractor shall furnish daily janitorial services for the temporary field office, storage, and other construction buildings on the project site and perform any required maintenance of facilities and grounds as deemed necessary by the Contracting Officer during the entire life of the contract. Toilet facilities shall be kept clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations but will be accomplished only when the buildings are occupied. Services shall be accomplished to the satisfaction of the Contracting Officer. The Contractor shall also provide daily trash collection and cleanup of the buildings and adjacent outside areas, snow removal in season, and shall dispose of all discarded debris, aggregate samples and concrete test samples in a manner approved by the Contracting Officer.

11. BURNING: No material shall be burned at the project site unless otherwise specified in other sections of these specifications or authorized by the Contracting Officer.

12. DUST CONTROL: The Contractor will be required to maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which would cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

13. MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION: During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. During the construction period the Contractor shall conduct frequent training courses for his maintenance personnel. The curricula shall include methods of detection of pollution, familiarity with pollution standards, and installation and care of vegetation covers, plants, and other facilities to prevent and correct environmental pollution.

14. PESTICIDES (INSECTICIDES, FUNGICIDES, HERBICIDES, ETC.): Application of all pesticides shall be accomplished by certified pest control personnel or under the supervision of a certified pest control operator. Delivery and storage of pesticides will be monitored by certified personnel to insure the adequacy of containers and the safe storage of toxic materials. Disposal of containers and chemicals will be monitored to prevent pollution of natural drainage systems.

15. FRIABLE ASBESTOS - BUILDING DEMOLITION: Friable asbestos materials, if any, used to insulate or fireproof any boiler, pipe, or load-supporting structural member shall be wetted and removed from any building, structure, facility, or installation subject to this paragraph before wrecking of load-supporting structural members is commenced. Boilers, pipes, or load-supporting structural members that are insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping or wetting, except that where the boiler, pipe, or load-supporting structural member is cut or disjointed, the exposed friable asbestos materials shall be wetted. Friable asbestos debris shall be wetted adequately to insure that such debris remains wet during all stages of demolition and related handling operations.

16. FRIABLE ASBESTOS - DISPOSAL: Unless otherwise directed, all asbestos-containing waste material will be handled and disposed of as specified in Title 40 Code of Federal Regulations, Part 61, Subpart M.

17. CLEAN-UP OF CONTAMINATED EQUIPMENT: All equipment that has been contaminated by sludge from the pond shall be cleaned before leaving the site. An equipment washdown station shall be maintained at the site as located on the plans until all of the sludge has been removed. All water resulting from the clean-up operation shall be disposed in accordance with Section 2D.7.5 of these specifications.

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TECHNICAL PROVISIONS

SECTION 1F - AS-BUILT DRAWINGS

1. SCOPE: This section covers as-built drawings, complete.

2. AS-BUILT DRAWINGS:

2.1 General: The Contractor shall furnish two full size sets of blue-line prints for use in preparation of as-built drawings by the Contractor. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the contract work. In event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the as-built drawings, the Contractor shall furnish revised and/or additional drawings as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the as-built drawings included in the original submission.

2.2 Preliminary As-Built Drawings: The Contractor shall mark up one set of paper prints to show the as-built conditions. These as-built marked prints shall be kept current and available on the jobsite at all times. Subject to the approval of the Contracting Officer, a member of the Contractor's Quality Control Organization shall be assigned sole responsibility for the maintenance and currency of preliminary as-built drawings. Any reassignment of duties concerning the maintenance of the as-built drawings shall be promptly reported to the Contracting Officer. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. All changes and/or required additions to the paper prints shall be clearly identified in a color contrasting to blue, preferably red. The as-built marked prints will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and the assigned representative of the Contractor's Quality Control Organization prior to submission of each monthly pay estimate. (See paragraph: Withholding for Preliminary As-Built.) The as-built drawings shall show the following information, but not be limited thereto.

2.2.1 The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location of exterior utilities includes actual measured horizontal distances from utilities to permanent facilities/features. These measurements shall be within an accuracy range of six inches and shall be shown at sufficient points to permit easy location of utilities for future maintenance purposes. Measurements shall be shown for all change of direction points and all surface or underground

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components such as valves, manholes, drop inlets, clean outs, meter, etc. The general depth range of each underground utility line shall be shown (i.e., 3' to 4' depth). The description of exterior utilities includes the actual quantity, size, and material of utility lines.

2.2.2 The location and dimensions of any changes within the building or structure.

2.2.3 Correct grade or alinement of roads, structures or utilities if any changes were made from contract plans.

2.2.4 Correct elevations if changes were made in site grading.

2.2.5 Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

2.2.6 The topography and grades of all drainage installed or affected as a part of the project construction.

2.2.7 Options: Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built drawings.

2.2.8 As part of the prefinal inspection, the preliminary as-built drawings will be reviewed. They must comply with this specification prior to scheduling the final inspection, and/or prior to substantial completion of the project.

2.2.9 Submittal to Contracting Officer for Review and Approval: Two copies of the preliminary as-built marked prints shall be delivered to the Contracting Officer before the time of final inspection for his review and approval. Final inspection will not be scheduled by the Contracting Officer until preliminary as-built drawings have been approved. The review by Government personnel will be expedited to the maximum extent possible. Upon approval, one copy of the as-built marked prints will be returned to the Contractor for use in preparation of final as-built drawings. If upon review, the drawings are found to contain errors and/or omissions, they shall be returned to the Contractor for corrections. The Contractor shall complete the corrections and return the drawings to the Contracting Officer within ten (10) calendar days.

2.2.9.1 Withholding for Preliminary As-Built: Failure by the Contractor to maintain current and satisfactory as-built drawings in accordance with these requirements will result in withholding from progress payments an amount equal to the value of the subject as-built drawings. The Contracting Officer will indicate an unearned balance on monthly payment estimates in accordance with the above, until the Contractor has fulfilled the contract requirements.

2.3 Final As-Built Drawings: Upon approval of the preliminary as-built prints, the Contracting Officer will furnish the Contractor the tracings of the original set of contract drawings. These drawings shall be modified as may be necessary to correctly show all the features of the project as it has been constructed by bringing the contract set into agreement with the preliminary as-built prints, adding such additional drawings as may be necessary. These drawings are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense. Upon completion they shall be delivered to the Contracting Officer together with the preliminary as-built marked prints, one set of final blue-line or black-line prints, and one set of 35 millimeter microfilms for approval.

2.3.1 If additional drawings are required, they shall be prepared on blank sheets furnished by the Government at no cost to the Contractor.

2.3.2 Drafting: Only personnel proficient in the preparation of engineering drawings shall be employed to modify the original contract drawings or prepare additional new drawings. All additions and corrections to the contract drawings shall be neat, clean, and legible and shall match the adjacent existing linework and/or lettering being annotated in type, density, size, and style. All modifications and new drawings shall, in addition to the above, conform to applicable requirements of the Architect-Engineer Instruction Manual (AEIM), Chapter I - Drafting, issued by the Fort Worth District, Corps of Engineers, and available from the Area or Resident Engineer's Office. The Contracting Officer will review all as-built drawings for accuracy and conformance to the above specified drafting standards. The Contractor will make all corrections, changes, additions, and deletions required to meet these standards.

2.3.2.1 When final revisions have been completed, each drawing shall be lettered or stamped with the words "DRAWING OF WORK AS BUILT" in letters at least 3/16" high placed below the title block between the border and the trim line. The date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest existing revision notation.

2.3.2.2 Title Blocks: The title block to be used for any new as-built drawings shall be similar to that used on the original drawings.

2.3.3 Reproduction:

2.3.3.1 General: Reproduction required under paragraph 2.3 "Final As-Built Drawings," above shall be performed in accordance with the following requirements and shall be subject to approval of the Contracting Officer.

2.3.3.2 35 mm microfilm furnished by the Contractor shall meet the following requirements:

- (1) 35 mm film negatives shall be produced from the drawings as corrected to reflect as-built conditions, using a camera designed for microfilming engineering drawings. Reduction ratio shall be between 1:29 and 1:30. Finished film image outside these limits will not be acceptable.
- (2) Microfilm shall have a high-contrast emulsion capable of resolving at least 135 lines per mm, and shall be processed in accordance with manufacturer's standards. Film shall be processed and washed to meet archival standards for cleanliness of .005 mg of "hypo" per square inch.
- (3) Finished microfilm negatives shall have a uniform background density of .8 to 1.1 as read on a standard transmission densitometer. Image lines shall not be blurred or "blocked up" so as to be individually indistinguishable. Negatives shall be capable of photographic enlargement up to the original size of the drawing without appreciable loss of definition as compared to the original drawing.
- (4) Finished negatives shall be free of scratches, light paths, fogged areas, water marks and/or air bells.
- (5) Film shall be mounted in standard aperture cards, 7-3/8" by 3-1/4", with the title block positioned in the upper left hand corner of the aperture and with the emulsion side of the film down.
- (6) Each aperture card shall be identified with the following information typed or legibly written across the top of the card: (1) Name of installation (2) Contract number (3) Plate or sequence number (4) Title of job (first card only).
- (7) See attached sketch of sample aperture card.

2.3.3.3 Blue-line or black-line prints shall be full size, 28" x 40" image on 30" x 42" sheet. All blue- or black-line prints shall exhibit good readable print with clear, sharp, dark lines, and shall not be smeared, faded, double imaged, or have torn or ragged edges.

2.4 Submittal Requirements: After receipt of the approved as-built preliminary drawings and the tracings of the original contract drawings, the Contractor shall submit to the Contracting Officer the final as-built drawings and the approved preliminary as-built marked prints and all required reproduced items. They shall be complete in all details. All paper prints, reproducible drawings, and microfilms will become the property of the Government upon final approval. Failure to submit as-built drawings as required herein shall be cause for withholding payment due the Contractor for final as-built drawings under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

2.5 Payment for Final As-Built Drawings: Payment for the performance of the work outlined above will be made after its acceptance by the Contracting Officer. This work is a subsidiary portion of the contract work, therefore an amount, as specified in paragraph 1(a) of the SPECIAL CONTRACT CLAUSES has been withheld from the Contractor's bid price and will be paid upon acceptable performance of the work.

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CONTRACT NUMBER

INSTALLATION
NAME

TITLE OF JOB ON COVER SHEET ONLY

SEQUENCE
NUMBERFORT BLISS
DACA63-75-C-0218

GUNNERY RANGES

0

7-3/8" x 3-1/4" APERTURE CARD

FILM

TITLE BLOCK

APERTURE CARD

SCALE: 3/4" = 1"

FILM NOTES:

1. GLOSSY SIDE UP.
2. REDUCTION TOLERANCE 1:29 TO 1:30.

PART II

TECHNICAL PROVISIONS

SECTION 1G - MOWING

1. GENERAL: Grass and weedy vegetation within the areas utilized by the Contractor, including work areas, administrative areas, and storage areas, shall be kept mowed to control vegetative growth.

2. MOWING: Vegetation shall be mowed when it reaches a height of six (6) inches. Mowing shall be to a height of three (3) inches. Mowing shall be accomplished with a rotary mower that leaves the clippings evenly distributed on the soil surface. Mowing shall be accomplished during periods and in such manner that the soil and grass will not be damaged. Towed or self-propelled riding mowers shall not be operated within three (3) feet of trees or shrubs. Areas adjacent to trees and shrubs shall be mowed with hand-propelled mowers.

2.1 Government may immediately after notice to the Contractor and at the discretion of the Contracting Officer mow the Contractor's areas at any time the vegetation height exceeds 6 inches.

3. PAYMENT: No separate payment will be made for mowing as required under this section and all costs incurred by the Government for performing such work shall be deducted from the contract.

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TECHNICAL PROVISIONS

SECTION 1H - SECURITY REQUIREMENTS

1. GENERAL: Longhorn Army Ammunition Plant is engaged in activities related to the National Defence effort. Security measures are considered of utmost importance in operation of the plant. Morton Thiokol Corporation is the operating contractor for the plant and, as such, has responsibility for formulation and enforcement of regulations that will provide adequate security. The requirements included in this section were developed by Morton Thiokol for general use by all contractors working on the plant site. The requirements were developed in accordance with Department of Army Regulations, Industrial Security Procedures, Safety Regulations, and established practices, and apply to all contractor personnel. Security and Safety and other groups, as appropriate, shall administer the regulations and shall respectively assume responsibility for their enforcement. An agreement is included which must be completed by the Contractor and forwarded to the Morton Thiokol Security Chief in Building 720-A prior to initiation of on-site activity.

2. INSTRUCTIONS

2.1 Identification of Contractor's Employees: All personnel entering the installation shall be required to display an identification badge on their outer garment, in the left chest-high area of the person. Badges are authorized by the Industrial Security Manual and Army Regulations. The type authorized will be issued by the installation's Security Office. The prime contractor and all sub-contractor(s) employees, awarded contracts to perform work on Longhorn Army Ammunition Plant, must be U.S. Citizens.

a. An immigrant alien lawfully admitted to the U.S. under an immigrant visa for permanent residence are acceptable for admittance to the plant. Such persons are to produce an Alien Registration Receipt Card, Form No. 1-151 or 1-551, reflecting their lawful admittance to the United States. This registration receipt must be presented to the Security Chief for verification on the persons Form TLD 11-33, Non-Employee Badge Request.

b. Illegal aliens will not be admitted to the plant.

c. Contractor employees of Foreign Nationality whom the contractor management request admittance to the plant and who complete appropriate documents for admittance to the plant, may be subject to check for verification of their being a U.S. Citizen or that they are in this country legally.

2.2 Prime Contractors and their Sub-Contractors -- Corps of Engineers

a. Method of Obtaining Identification Badges and Passes

(1) Executive and Superintendent

(a) The construction superintendent and/or executive member of the contract firm shall report to Post 1 and request contact with the Security Chief.

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AGREEMENT

This is to certify that I am a duly appointed representative of

(Company Name and Address)

and, as such, am authorized to sign an agreement binding upon the organization which I represent. I hereby acknowledge receipt of copies of instruction sheets to contractors which I understand to be Safety and Security regulations pertinent to the performance of Contract No. _____ at Longhorn Army Ammunition Plant. I agree that I will read and abide by these aforementioned regulations in the performance of this contract, and shall further require my employees and/or sub-contractor(s) to be governed strictly thereby.

I understand that Longhorn Army Ammunition Plant is engaged in activities related to the National Defense effort. It is further agreed that I, my employees, and/or sub-contractor(s) will not reveal to unauthorized persons any information concerning the National Defense or violate any of the laws of the United States thereto.

Signature _____ Title _____

Witness _____ Title _____

Date _____

This agreement, when completed, is to be detached from the instruction sheets and directed to the Security Chief.

(b) The Post 1 guard shall contact the Security Chief who shall confirm contract award and authorize the issuance of a badge to the superintendent and/or executive.

(c) The executive shall complete Form TLD 11-33 (Application for Non-Employee Badge) to support his request for the issuance of a picture badge to the construction superintendent or for himself and shall surrender the Form TLD 11-33 to the Security Chief for approval.

(d) On approval of the Security Chief the clerk shall prepare the appropriate badge as prescribed by the Security Chief.

(e) The clerk shall prepare the required badge insert and take the required photographs of the executive or superintendent, a minimum of two, one for the badge and the other to be attached to the application and filed in the security office.

(f) The superintendent shall read and sign the badge insert.

(g) Badges are authorized for supervisory retention and/or entry and exit of Post 1 or the work entry gate shall be specifically identified.

(h) The clerk shall prepare and issue the picture badge to the superintendent.

(i) The superintendent may be issued a supply of Form TLD 11-33 and shall distribute them to employees requiring a picture badge.

(j) The superintendent may request applications for vehicle passes as stated in 2.2 of these requirements.

(k) The superintendent and the executive shall then proceed to the Post 1 guard, turn in their visitor badges, and proceed as may be required for accomplishing their mission.

b. Permanent Employee Badges

- (1) The superintendent shall supply each employee to be issued a picture badge a copy of Form TLD 11-33. When the forms are completed, he shall escort his employees to Post 1 or the other work entry gate.
- (2) Construction employees shall submit TLD 11-33 to the guard for authorization to contact Security for badges. Security shall authorize entry to prepare the construction employee's badge(s).
- (3) The guard shall issue temporary badges to employees for this entry.
- (4) The clerk shall retain and file the completed Form TLD 11-33 along with picture(s) of the person.
- (5) The superintendent shall then escort the employee(s) back to the Post 1 guard where they shall turn in their temporary badges and proceed to their work entrance.
- (6) Should the clerk be unable to prepare the badges by the time the employee is to report to work, the clerk will issue a memo to the employee who shall surrender this memo to the guard at the entry post. The guard will honor this memo and issue a temporary badge and visitor's pass.
- (7) At the end of the work day, the employee shall turn in the temporary badge and pass to the guard as he exits the installation through the designated work exit gate.
- (8) Permanent identification badges and passes shall be available to employees at the time of entrance to the installation through the designated work entrance gate on the following work day.

c. Temporary Employees of the Construction Contractors

- (1) A temporary employee is one that is needed for a certain job which will require his employment for a period of five (5) days or less.
- (2) The construction superintendent will report to the designated guard post with this employee.
- (3) The construction superintendent will inform the guard that the employee will be employed for only a few days and request the guard to issue a temporary construction badge and visitor's pass for the number of days required (not to exceed five days). These badges and passes will be returned to the post of entry at the end of each work day. The guard shall place the badge and pass in the badge rack.
- (4) The guard will issue the badge and pass daily and shall register the employee's entry and exit.
- (5) The detached visitor's pass shall be attached to the corresponding pass number retained by the guard when the pass expires.

2. Use of the Identification Badge

- a. An employee entering the installation at the beginning of each work day shall be issued an identification badge by the guard.
- b. Badges shall be worn conspicuously on an outer garment in the vicinity of the upper left chest area at all times while on the reservation.
- c. Badges are not transferable and shall not be loaned, exchanged, mutilated or altered in any way.
- d. An employee exiting the installation shall turn in his badge to the guard at the post on request of the guard.
- e. Contractor and subcontractor personnel issued identification badges authorizing the entry to the installation shall use the designated routes of travel to and from their work sites, and while at the work site, personnel must confine their movement to the immediate work area, and shall not be permitted outside the work area except for entry and exit.

3. Surrender of Identification Badge and Pass

- a. Badges and passes are the property of the U. S. Government and are issued by Morton Thiokol Corporation to the bearer. They shall be surrendered when connection with this installation is terminated. Unauthorized use of badges may result in prosecution.
 - b. Superintendents and/or executives shall be held accountable for all badges issued and shall return, to the Security clerk, the badge(s) of any employee terminated and/or badges of all employees (including himself) at the termination of the contract.
- C. The superintendent of the prime construction contractor shall sign the subcontractor superintendent's Form TLD 11-33, or other subcontractor Forms TLD 11-33 requiring a badge which authorizes entry through Post 1 and work entry gate.
- D. Entry and Exit of the Installation
- 1. Enter and exit the installation only at designated and attended guard posts. Entry and exit of the various areas of the installation shall also be through attended guard posts only.
 - a. Any employee found or determined to have entered or made exit of the installation or areas other than at attended entry points shall be subject to disciplinary action.

2.2 Vehicle Permits - Contractor and Contractor Employees

A. All contractor vehicles, company-owned or private, entering this installation shall prominently display the vehicle permit, which is authorization to operate the vehicle on this installation. Movement of these vehicles is restricted to the prescribed routes between the point of entrance and the work areas and/or designated parking areas. Deviation from prescribed routes of travel may be cause for disciplinary action or prohibit future plant entrance of the vehicle and/or violator. Employees private vehicles are not normally permitted entry to the installation and are not permitted entry to restricted areas unless their vehicle is covered by the higher limits of liability insurance.

B. Requirements for Vehicle Permit

1. Contractor Owned, Leased or Hired Vehicles

Each vehicle for which a permit is issued must be covered by liability insurance as specified in SPECIAL CONTRACT CLAUSE "REQUIRED INSURANCE." Certification of lease or hired vehicles must be completed and presented to the Security Chief for retention as proof of leasing or hire and insurance coverage by the Contractor in the amounts listed above.

2. Contractor Employee Vehicles -- Minimum Automobile Insurance Limits

- a. Liability Bodily Injury Per Person \$10,000
- b. Liability Bodily Injury Per Accident 20,000
- c. Property Damage Per Accident 5,000
- d. Contractor employee's vehicles will be issued a vehicle pass only on request of the contractor superintendent or manager and on approval of the Security Chief. Contractors normally transport their employees by company transportation to and from the installation to avoid congestion in their work areas. Should permits be approved and issued, the vehicles will not be permitted into restricted areas and only to the construction designated parking area.

3. Evidence of renewed insurance coverage must be presented to the offices of the Security Chief on or before the expiration date of the old policy.
4. Each vehicle must bear proof and meet the safety inspection standards of the state of license and other such standards as may be required to insure safe operation on the installation.
5. The owner or other employee designated as driver of a vehicle operated on the installation must have a valid state driver's license.
6. The operator of the vehicle must be physically qualified to safely operate the vehicle.

C. Application for Vehicle Permit

1. Contractor supervisors shall apply for vehicle permits for their vehicles as follows:
 - a. Obtain necessary supply of "Vehicle Registration", DA 3626, from the Security clerk, Building 720-A, at time of badge issuance.
 - b. Complete one copy for each vehicle, attach liability policy or certificate thereof, and submit to the Security clerk, Building 720-A.
2. Upon receipt of a properly completed request, DA Form 3626, the clerk shall complete a "Construction Contractors Vehicle Permit", Form T70-61, and forward to the guard at the appropriate work entrance.
3. The guard shall affix the permit to the lower left side of the windshield of the appropriate vehicle when it is presented at the work entrance by the contractor.

D. Permit Expiration

1. Contractor Vehicle Permits may be issued for the duration of the contract; however, all vehicle permits will be renewed when new license plates are placed on the vehicle. Requests from the supervisor for renewal of required permits must be submitted to the clerk one week prior to expiration. Permits previously issued and no longer required will be returned to Security for accountability.

2. Vehicle permits expire on termination of the employee to whom the permit was issued and must be immediately surrendered to the office of the Security Chief for accountability.
3. Contractor superintendents are responsible to assure return and accountability of all vehicle permits.

E. Revocation or Suspension of Permit

1. A permit may be suspended or revoked for the following reasons:
 - a. Violation of regulations
 - b. Failure of vehicle to pass spot check safety inspections
 - c. Competency of the operator becomes questionable
 - d. Lapse of liability insurance coverage
 - e. Failure to comply with any part of the Contractor Regulations

F. Control of Permits

1. Permits must be removed and returned to the office of the Security Chief if vehicle is sold, traded, or transferred from this reservation by the contractor.
2. Permit shall not be transferred to another vehicle.
3. Employees shall not remove, tamper with, or transfer permit except as outlined in 1 above or G below.

G. Surrender of Permits

1. All permits shall be removed from the windshield in such a manner as to preserve the number, or number must be written elsewhere on permit and surrendered to the clerk upon termination of connection with the installation.

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2. Superintendents shall be held accountable for all permits issued to their employees and shall assure their return on termination of employment or on expiration of the contract.

H. Vehicle permits may be issued on a temporary basis to vehicles leased or rented by the contractor provided the contractor's insurance policy provides for the required insurance coverage of the leased/rented vehicle, or the lessor shall supply certificates of sufficient liability coverage on the vehicle(s).

I. Delivery Vehicles (Commercial)

Material supply companies utilizing their company vehicles to make deliveries of materials previously purchased by construction companies will be handled as follows:

1. Construction contractors should notify Security of expected deliveries. When such delivery vehicles appear at the installation entry gate, the guard will notify the construction superintendent of the arrival of materials.
2. The superintendent shall authorize entry to the guard if such entry is desired and shall provide an escort for the driver and vehicle from the entry gate, while on the installation, and return to the exit gate.
3. Commercial vehicles making deliveries having partial loads for construction companies and Thiokol warehouse will be escorted by construction personnel from the Thiokol warehouse if the first part of the load is for Thiokol. Should the first unloading be with the construction contractor, then the contractor will escort the delivery on to the Thiokol warehouse.
4. The DARCOM Form 1615 is used as a personnel and vehicle register and pass. Item 10 will be completed by the contractor, i. e., destination time in (into the installation) time out (time of exit of the installation or relieved by the contractor as in item 3 above) and signature of the recipient or person visited.

This form (pass) will be returned to the guard at the point of issue on exit of the deliveryman.

2.3 Material Pass - Contractor Property and Contractor Employee Personal Property:

- a. Hard hats
 - b. Rain gear -- boots, raincoats, etc.
 - c. Rules (but not tapes)
 - d. Prescriptions, for medicinal purposes
 - e. Safety glasses, goggles, etc.
 - f. Transits, surveying rods and chains
 - g. Flashlights
 - h. First aid kits
 - i. Workmen's gloves
 - j. Snake bite kits
- A. The resident engineer or his delegated representative may authorize the removal of the contractor's material from the installation.
- B. The resident engineer or his delegated representative shall inspect all material to be removed to determine that it is the property of the contractor/subcontractor or personal property of their employees.
- C. The engineer authorizing the removal of property shall complete the "Construction Forces Material Pass", Form TLD 11-31, in triplicate as follows:
- a. All items to be removed except those listed in Section 4 below shall be listed on the form with the remaining space marked through to prevent the addition of items.
 - b. All copies shall be given to the person requesting the removal.
 - c. The bearer shall surrender all copies to the guard at the point of exit.
- D. The following personal or construction company items may be removed from the installation without execution of the "Construction Forces Material Pass", Form TLD 11-31, when officially stenciled or marked as property of the contractor or employee.

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- E. Government property will not be removed unless accompanied by properly authorized Material Pass issued by the Morton Thiokol Property and Materials Manager.

2.4 Prohibited Items

- A. All personnel and vehicles entering or exiting the installation are subject to search by guards. Vehicles and personnel shall also be subject to spot searches performed by guards within confines of the reservation.
 - 1. There is a condition of entry sign posted at the entrances to the installation and it is applicable to all persons entering.
 - 2. Personnel objecting to search shall be denied entrance to the installation.
- B. Army regulations prohibit the following items from being brought on the installation.
 - 1. Firearms and/or ammunition
 - 2. Alcoholic beverages
 - 3. Narcotics
 - 4. Cameras and/or film
 - 5. "Strike anywhere" matches and/or fuses
 - 6. Switchblade knives and/or knives with blades over three inches

Note: Safety matches, cigarette lighters (personal and vehicle) friction lighters or any sparking device will not be carried into restricted areas of the installation. Authorized sparking devices will be handled as described in Section 2.8 of these requirements.

C. Dangerous Weapons

Items that could be considered as dangerous weapons, i.e., hunting or long-blade knives, billy clubs, night sticks, short chains, pipes, hoses, etc., that are in effect a club, hatchets and similar items which are or may be considered as dangerous weapons are prohibited items. The placement of such items for availability of use will be a consideration in determining whether the items are considered as dangerous weapons.

- D. Prohibited items found during search shall be confiscated by the guards, who shall obtain appropriate information and notify Security supervision immediately.

2.5 On-Post Demonstrations

- A. Picketing, demonstrations, sit-ins, protest marches, political speeches and similar activities are prohibited and will not be conducted on this installation.
- B. The Commanding Officer may grant exceptions to this policy. Applications for exceptions shall be submitted in writing to the Army Security Office, at least seven days prior to the date of the proposed demonstration or other activity.
- C. No one shall enter or remain on this installation for any of the purposes prohibited by this regulation and such entry will constitute a violation of Title 18, U.S. Code, Section 1382, which provides in part that "Whoever, within the jurisdiction of the United States, goes upon any military reservation, post, fort, arsenal, yard, station or installation, for any purpose prohibited by law or lawful regulation...shall be fined not more than \$500 or imprisoned not more than six months or both."

2.6 Traffic Regulations

A. All contractor personnel shall observe and abide by the following traffic regulations:

1. Unless otherwise marked or indicated, the maximum speed within the installation shall be:

35 mph for passenger vehicles and trucks with a capacity of one ton or less
25 mph for all trucks with a capacity of over one ton
 - a. Speed limits are posted within restricted areas of the installation and shall apply to all vehicles.
 - b. Maximum speed within parking areas shall be 15 mph for all vehicles.
2. No motor vehicle shall be stopped, parked, or left standing, whether attended or unattended, upon the traveled portion of any road.
 - a. When conditions make it impossible to move vehicle from traveled portion of the road, every effort shall be made to leave all possible width opposite such vehicle for free passage of other vehicles, and care shall be taken to provide a clear view of the stopped vehicle as far as possible to the front and rear. At night (one-half hour after sunset to one-half hour before sunrise) vehicles which are stalled shall not be parked without the illumination of parking lights.
3. No motor vehicle shall be left unattended until after parking brake has been securely set and all other reasonable precautions have been taken to prevent its movement.
4. Parking of privately-owned vehicles closer than fifty (50) feet to any building or structure shall be prohibited.

5. Privately-owned vehicles shall be parked only in designated parking areas.
 6. Passing of explosives laden trucks (when so marked) shall be prohibited unless a passing signal is given, and overtaking and passing can be accomplished with utmost safety.
 7. Vehicles approaching railroad crossings shall be driven at speeds that will permit stopping, if necessary, and shall proceed only if the crossing is clear of railroad equipment.
 8. Personnel involved in an accident that results in personal injury or damage to a Government vehicle shall report the incident immediately to his supervisor who shall notify Safety.
- B. Any motor vehicle operator who drives at a speed greater than is reasonable and without due regard to inclement weather conditions, traffic, character of roadway, condition of vehicle, and any other obviously hazardous conditions shall be considered a reckless driver and in violation of the Contractor Regulations.
- C. Guard personnel shall check for violations and enforce appropriate parts of these regulations. Traffic Ticket (DD Form 1408) will be issued to violators for violation of traffic rules and regulations. These tickets are completed in triplicate. The original and yellow copies are submitted to the Security Chief for further disposition.
1. The pink copy is issued to the employee when available.
 2. Vehicles in violation and unattended - the traffic ticket shall be left on the vehicle windshield, with instructions for the driver to notify his supervisor and call Ext. 2327 advising the name of the violator and other pertinent information required.
- D. Construction companies shall be held pecuniarily responsible for damages incurred as a result of a motor vehicle accident which occurred through negligence on the part of any of their drivers.

2.7 Accident and Fire Reporting

A. Accidents Involving Property Damage Only

1. The person most directly responsible or having first knowledge of such accident shall immediately notify his supervisor. If a supervisor is not immediately available, the most responsible person at the location shall act in his stead.
2. The supervisor shall take action to see that nothing is moved or altered; unless necessary to prevent further damage or possible injury.
3. The supervisor, after securing area of the accident to prevent loss of evidence, shall immediately notify by telephone, the following:
 - a. His own supervisor
 - b. Safety
 - c. Security
4. In case the accident occurs on an off-shift when Safety personnel are not available, the supervisor shall immediately notify, by telephone, the Guard Sergeant, phone 2327.
5. Immediate action shall then be taken by the individuals contacted to investigate the accident so that the equipment involved may be released and repairs started.

B. Accidents Involving Personal Injuries

1. All injuries, regardless of how minor in nature, shall be reported to the person in immediate charge of the operation.
2. It shall be the responsibility of the person in charge of the operation where the injury occurred to determine what immediate medical attention is needed by the injured.
3. If it is determined that the injury is of a nature that would preclude movement of the injured, the procedure outlined below shall be followed.

- a. The injured will be made as comfortable as possible.
- b. A reliable person shall be immediately dispatched to the nearest telephone to call an ambulance.
- c. The person placing the call shall tell the telephone operator that he is reporting an accident and needs the services of an ambulance and to notify the hospital and guards.
- d. The telephone operator will then ring guard headquarters.
- e. The person placing the call shall repeat his request for an ambulance and inform the guard of the scene of the accident by building number, occupancy, and/or location, and repeat the location to the guard. This is important to assure that the ambulance is dispatched to the proper location.
- f. The telephone operator shall listen to this request and then inform the dispensary staff that an accident has occurred, that an ambulance is to be dispatched to the scene and give any other pertinent information regarding the accident that she may have received.
- g. The person placing the call shall then return to the accident scene and assist in administering first aid, if required, to prevent further injury and await the arrival of the ambulance to direct it to the patient.
- h. After the injured person has been attended, the person in charge shall then call, in order, the following:
 - (1) His supervisor
 - (2) Safety

4. If it is determined that the injured can be safely transported to the hospital or dispensary by means other than the ambulance, the person in charge of the operation where the accident occurred shall immediately provide such transportation.
5. If the accident is of a nature that resulted in serious injury, potential serious injury, damage to or potential damage to equipment or facilities, the person in charge shall secure the area to prevent loss of evidence and call the following in order:
 - a. His supervisor
 - b. Safety
 - c. Security
6. In case the accident occurs on an off-shift, when Safety personnel are not available, the supervisor shall immediately notify the guard sergeant who will in turn notify off-duty exempt Safety personnel.
7. An immediate joint investigation shall be made by the individuals concerned so that any equipment involved may be released for repair.
8. A written report of the investigation shall be made by the Safety personnel and distributed to interested parties.

C. Reporting Motor Vehicle Accidents

1. A motor vehicle accident is an occurrence involving the operation (whether moving or halted) of a vehicle that results in death, injury requiring medical treatment or care, destruction of or damage to any vehicle sufficient to normally require repair or replacement or destruction of or damage to any other property.
2. If injuries have occurred, the immediate efforts shall be directed at securing medical attention for the injured. If the driver is injured, the next most responsible person in the vehicle or anyone discovering the accident shall proceed as outlined below:

- a. After securing the immediate vicinity to prevent further injury to persons or damage to property, the driver shall notify, in order, the following:
 - (1) His supervisor
 - (2) Safety
 - (3) Guard sergeant
- b. The driver shall await the arrival of the guard and Safety representatives.
- c. If the accident occurs on an off-shift, the guard sergeant shall be notified and the vehicle shall be secured until the day shift without moving unless such action would involve additional hazards.

D. Reporting Fires

1. All fires shall be reported immediately to the Fire Control Branch by telephone and/or fire alarm boxes.

Fires may be reported by the following means:

- a. Telephone

Dial "0" and tell the operator "Fire." She shall connect you with the Fire Station. Tell the firefighter receiving the call that you wish to report a fire. Give him the building number, occupancy, and other information that will assist the fire-fighting. Give a clear and accurate report and do not break the connection until the firefighter has repeated the information including the correct building number.

- b. Fire Alarm Boxes

The boxes are connected directly to the Fire Station alarm recording system. Fires may be reported on these boxes by pulling and releasing the trip mechanism.

2. In the event of a fire in any area near construction contractor's work site, the superintendent shall instruct all personnel to remain at their location until instructed to evacuate by Morton Thiokol officials.

2.8 Flame Permit

- A. When an open fire is to be created in any area, it is necessary to obtain a flame permit.
- B. At any time the use of flame, heat or spark producing equipment is necessary in any operation area except the shops area, a written flame permit (TLD 11-7) shall be required to be issued.
 - 1. In Controlled Areas this regulation is intended to include electric power tools, welding equipment, soldering irons, blow torches, tar kettles or asphalt heaters, or any device or piece of equipment capable of producing sparks, flame, fire, or heat.
- C. It shall be the responsibility of the contractor performing the work to initiate the permit. This shall be accomplished by filling out all of the forms except the "Precautions to be taken" and advising the Fire Control Branch at the Fire Station, Extension 2315, and the location supervisor of the work to be performed. Forms may be obtained from the Fire Station.
- D. These representatives shall inspect the work area and mutually determine and list precautions to be taken before and during the performance of work. Flame permits covering work to be performed on machines and equipment subject to contamination must be signed by all representatives signifying approval.
- E. An original and two copies of the flame permit shall be completed. The original shall remain in view at the work site until the job has been completed, one copy shall be retained by the Fire Control Branch, and one copy sent to Safety Section. The flame permit is valid only for the location given and the time designated.
- F. The signature on the permit of the construction superintendent in charge of the work indicates that he is fully informed of the hazards in the work area, of the details of safe performance, and all other requirements necessary for the work to be performed in the safest manner possible.

- G. Signature of the supervisor of the location indicates that he has prepared the work site by removing all explosives and combustible materials possible, and that he has acquainted the work supervisor of all hazards in the area in which the work is to be performed. (In this connection, the "supervisor of the work location" is considered to be supervisor in charge of the building in which the work is to be performed. When work is to be performed outside a building, the "supervisor of the location" is considered in charge of the area in which the work site is located.)
- H. Signature of a representative of Fire Control indicates approval for the performance of the work under the conditions set out on the flame permit. Approval by Fire Control shall be made only after an adequate inspection of the work site has been made and assurance that all hazards have been minimized and compliance with the conditions of the permit is feasible. The permit should not be signed until compliance with the safety requirements has been achieved.
- I. The signed permit shall serve as authority for the flame or spark-producing equipment to be brought into the area and/or building. This prohibits such equipment from being brought into a restricted area or building until the above requirements have been fulfilled.
- J. It shall be the responsibility of the construction superintendent to properly instruct his workmen in the hazards of the job and to carry out all precautions listed on the permit.
- K. Deviation from the provisions of the flame permit shall be permitted only on the written approval of the Safety Section, who may also approve and issue flame permits in the absence of Fire Control members in accordance with paragraph H above.

2.9 Safety Regulations

A. Housekeeping

1. Good housekeeping is essential to safe machine operations. Floor of work area should be kept dry, clean, and free from obstructions. Spilled oil, material, or liquids should be promptly cleaned up or removed. Accumulations of scrap waste, dust, and dirt will not be permitted.
2. Hand tools shall be kept in good repair and proper racks, boards, shelves, or tool boxes provided for tools not in use. Tools shall not be left scattered about the work area, and shall be cleaned after use if contaminated, oily, or dirty.
3. Protective equipment such as goggles, eye shields, respirators and the like shall be kept clean, in good condition, and properly stored in cabinets, boxes, or locations when not in use.
4. Waste and scrap shall be placed in designated containers or removed to specified locations.
5. Closets, lockers, bins, spaces under the tables and benches, conveyors, stairs and platforms shall be kept clean and orderly.
6. Volatile flammable liquids will not be permitted in open containers; instead, they shall be stored and dispensed in approved and properly marked containers.
7. No cigarette, tobacco, or match disposal will be permitted in combustible waste cans. Proper type ash trays or butt cans should be provided.
8. Dripping and spillage of oil and oil soaking floors should be avoided.
9. Combustible materials shall not be permitted to accumulate and must be placed in designated receptacles or storage places.

10. Hazardous materials shall not be allowed to collect on structural members, radiators, heaters, steam, air, water pipes, or electrical fixtures and devices.
11. Catch pans shall be provided beneath draw-off pipes, faucets, or where leakage or spillage of hazardous materials may occur.
12. Littering streets, roadways, or other plant areas is forbidden. Throwing litter, i. e., bottles, papers, or other trash from vehicles is expressly forbidden and violators of this regulation will be subject to appropriate disciplinary action.
13. Soft drink bottles, milk cartons, etc., will not be removed from the building in which sources of the items, i. e., vending machines, etc., are located.
14. A regular program of cleaning shall be carried on as frequently as conditions require; but general cleaning should not be conducted while hazardous operations are being performed.
15. Work sites shall be subject to periodic inspections by Safety Inspectors.

B. Safe Working Practices

1. The working practices established for this installation are essentially the same as those contained in the Safety manuals of the Associated General Contractors of America, Safety Council, American Standards Association, and Association of Casualty and Surety Companies and shall be abided by at all times. Areas for special attention are as follows:
 - a. When in doubt concerning any operations, procedure, or risk, the Safety Section shall be contacted before proceeding.
 - b. Safety personnel shall inspect and observe construction operations at frequent intervals and report discrepancies to the construction superintendent.

- c. Contractor personnel shall restrict their movements to the location specifically covered by their contract and shall not expose themselves to unnecessary hazards.
- d. Contractors shall be required to furnish the safety equipment and personal protective devices necessary for their personnel, such as goggles, respirators, hand-type fire extinguishers, etc.
- e. Smoking shall be permitted only within confines of established and approved areas.
 - (1) Cigarette butts, etc., must be placed in containers which are provided; and personnel using the areas are responsible for cleanliness of the area at all times.
 - (2) Smoking shall be prohibited when wearing clothing contaminated with flammable materials.
- f. Contractors shall hold regular safety meetings with their employees to discuss safe working practices and accident prevention.

2.10 Labor Representatives

A. Admittance Permitted

1. Labor representatives desiring to contact a construction contractor shall report to the guard post at the entrance to this installation. The representatives shall state the nature of their business and who they desire to visit.
2. The guard shall contact the district engineer or his designated representative for approval of the visit to Corps of Engineers' contractors who shall advise the guard if the visit is approved.
3. If the visit is approved, the contractor shall provide transportation and escort for the time necessary to transact business.
4. The guard shall, if the visit is approved, issue visitor's badge and pass to the labor representative as prescribed in authorized procedures.

B. Regulatory

1. Irrespective of any other considerations construction superintendents shall consider that labor representatives will not be admitted to the installation under the following conditions:
 - a. When the entry of such representatives will violate pertinent safety or security regulations.
 - b. When the presence and activities of the labor representatives will interfere with the progress of the contract work involved.
2. Admittance Refusal

In every case where it is considered to be necessary to refuse admittance of a labor representative, the matter shall be brought to the attention of the Commanding Officer for final determination.

2.11 Violations and Disciplinary Action

Rules and regulations contained herein are those used for guidance of employees or persons on this installation. Violators are subject to disciplinary action to prevent recurrence.

The Security Chief is to be informed of Security violations and the following sequence of actions will be taken:

- A. The Security Chief shall notify the Provost Marshall immediately and forward a memorandum citing circumstances and, if appropriate, a copy of traffic violation ticket.
- B. Action deemed necessary will be determined and, if appropriate, the Security Chief notified for information or action.

2.12 Security and Accountability of Explosives

The Contractor, on reviewing the specification requirements for the contract, shall give notice when there is reason to use explosives such as dynamite or any explosives that the Contractor may need in the performance of his contract at this installation. The Contractor will expressly advise the awarding firm, Morton Thiokol Corporation and the Corps of Engineers, of this need.

- A. Prior to bringing such items on the installation the Contractor will notify the Army Security Officer and the Morton Thiokol Security Chief of the need to bring in explosives for work requirements. These officers will coordinate with the Contractor and, if possible, require that quantities for daily use be brought onto the installation rather than establishing a storage area.
- B. Should it be necessary that the Contractor's explosives be stored on the installation, explosives will be rigidly accountable from the time of entrance to the installation. A record will be maintained of issue and purpose of use by date and time as authorized by the construction job superintendent and coordinated with the project engineer and the Security Chief prior to use.
- C. Explosives, if necessary to be stored at this installation, will be stored in a container and location acceptable to Army and Morton Thiokol Security Officers and located as designated by Army and Morton Thiokol safety engineers. The door to this container will be secured with a high security lock and hasp or in a manner acceptable to Army and Morton Thiokol security officers. The Contractor will receipt to the Morton Thiokol Security Chief for keys to the lock.

- D. Prior to use of explosives on the plant, a Standing Operating Procedure must be developed by the construction contractor. . These procedures must be approved by representatives of Morton Thiokol and the Commanding Officer.

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4. REMOVAL AND RELOCATION OF EXISTING FENCE:

4.1 General: Existing fence and posts shall be removed, salvaged, and reconstructed at the locations shown on the drawings. All unnecessary damage to the salvaged fencing and the remaining fencing resulting from the Contractor's operations shall be repaired at the expense of the Contractor and to the satisfaction of the Contracting Officer. All holes left by removal of posts shall be backfilled and tamped with suitable material. All salvaged posts and fence shall be cleaned of concrete and other objectionable matter before reinstallation.

4.2 Reinstallation of Existing Fence: New tie wire and hog rings as specified hereinbefore shall be used for reinstallation of existing fence. Reinstallation of the existing fence shall conform to the applicable requirements specified hereinbefore for installation of new fencing and shall match the existing for post setting, height, and all other incidentals.

END OF PART II

PART 3 - EXECUTION

3. INSTALLATION: The fence shall be installed on previously prepared surfaces to line and grade indicated. Fence installation shall be as specified and in accordance with the fence manufacturer's written installation instructions.

3.1 Excavation: Excavation for concrete-embedded items shall be of the dimensions indicated except in bedrock. If bedrock is encountered before reaching the required depth, the excavation shall be continued to the depth indicated or 18 inches into the bedrock, whichever is less, and shall be a minimum of 2 inches larger than the outside diameter of the post. Post holes shall be cleared of loose materials. Waste material shall be spread where directed.

3.2 Post Setting: Posts shall be set plumb and in alignment. Posts shall be set in concrete bases of dimensions indicated except in bedrock. Concrete shall be thoroughly compacted so as to be free of voids and finished in a dome. Straight runs between braced posts shall not exceed 500 feet. In bedrock, posts shall be set with a minimum of one inch of grout around each post. Grout shall be thoroughly worked into the hole so as to be free of voids and finished in a dome. Concrete and grout shall be cured a minimum of 72 hours before any further work is done on the posts.

3.3 Post Caps: Post caps shall be of the design as required to accommodate the top rail. Post caps shall be installed as recommended by the manufacturer.

3.4 Supporting Arms: Supporting arms shall be of the design as required to accommodate the top rail. Supporting arms shall be installed as recommended by the manufacturer.

3.5 Top Rails: Top rail shall be installed before installing chain-link fabric and shall pass through intermediate post caps. Expansion couplings shall be provided and spaced as indicated.

3.6 Top and Bottom Reinforcing Wires: Top and bottom reinforcing wires shall be installed before installing chain-link fabric and shall be pulled taut.

3.7 Fabric: Fabric shall be pulled taut and secured to the top rail or top wire, and bottom wire close to both sides of each post and at intervals of not more than 24 inches on centers. Fabric shall be secured to line posts using ties or clips. Fabric shall be secured to end, corner, pull, and gate posts for the full length by integrally weaving to fastening loops or by using stretcher bars and bands.

3.8 Barbed Wire: Barbed wire shall be installed on supporting arms above the fence posts. Each strand shall be pulled taut and securely fastened to each supporting arm. The method of securing wires shall be positive and complete.

2.2 Post, Top Rails, and Braces: Fed. Spec. RR-F-191/3, zinc-coated, except as modified herein.

2.2.1 Post Braces and Truss Rods: For each gate, corner, pull, or end post. Truss rods shall be provided with turnbuckles or other equivalent provisions for adjustment.

2.2.2 Intermediate Posts: C-section line posts of the same dimension as H-post, 0.120-inch wall thickness, and fabricated from steel conforming to ASTM A 570, Grade 33 may be furnished in lieu of H- or round posts.

2.2.3 Posts, Braces, Rails and Gate Frames - Option: Steel pipe manufactured from steel conforming to ASTM A 569, cold-rolled and coated with a minimum of 0.9 ounce of zinc per square foot, a minimum of 15 micrograms of zinc chromate per square inch and a minimum of 0.3 mils cross link polyurethane acrylic exterior coating may be furnished in lieu of H- or round posts. Steel pipe shall be of the same external dimension as round posts in Fed. Spec. RR-F-191/3 for the respective uses with minimum wall thickness as follows:

<u>Outside Dimension, Inches</u>	<u>Wall Thickness, Inches</u>
1.66	0.111
1.90	0.120
2.375	0.130
2.875	0.160

2.3 Accessories: Fed. Spec. RR-F-191/4.

2.3.1 Barbed Wire: Zinc coated for use with zinc-coated fabric and aluminum coated for use with aluminum-coated fabric.

2.3.2 Barbed Wire Support Arms: Type as indicated.

2.3.3 Reinforcing Wire: Minimum tensile strength of 75,000 psi, zinc-coated for use with zinc-coated fabric and aluminum coated for use with aluminum-coated fabric. Minimum weight of aluminum coating shall be 0.40 ounce of aluminum per square foot of wire.

2.3.4 Tie Wire: Aluminum alloy of 0.1444-inch diameter for attaching fabric to top rail and to intermediate posts. Preformed clips of 6-gage, zinc-coated, steel wire may be used for attaching fabric to intermediate posts.

2.3.5 Hog Rings: Aluminum wire of 0.110-inch diameter for attaching fabric to top and bottom reinforcing wires.

2.4 Concrete: ASTM C 94, using 3/4-inch maximum-size aggregate, and having minimum compressive strength of 3,000 psi at 28 days. Grout shall consist of one part portland cement to three parts clean, well-graded sand and the minimum amount of water to produce a workable mix.

PART II

TECHNICAL PROVISIONS

SECTION 2H - FENCE, CHAIN-LINK

PART 1 - GENERAL

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 the basic designation only.

1.1 Federal Specifications (Fed. Spec.):

RR-F-191J/GEN	Fencing, Wire and Post Metal (And Gates, Chain-Link Fence Fabric, and Accessories) (General Specification).
RR-F-191/1C	Fencing, Wire and Post, Metal (Chain-Link Fence Gates) (Detail Specification).
RR-F-191/2C	Fencing, Wire and Post, Metal (Chain-Link Fence Gates) (Detail Specification).
RR-F-191/3C	Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces) (Detail Specification).
RR-F-191/4C	Fencing, Wire and Post, Metal (Chain-Link Fence Accessories Detail Specification).

1.2 American Society for Testing and Materials (ASTM) Publication:

A 569-72 (R 1979)	Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip, Commercial Quality.
A 570-79	Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality.
C 94-83	Ready-Mixed Concrete.

PART 2 - PRODUCTS

2. MATERIALS: Materials shall conform to Fed. Spec. RR-F-191 and detailed specifications forming the various parts thereto.

2.1 Chain-Link Fabric: Fed. Spec. RR-F-191/1, Type I, or Type II, with 9-gage wire woven in a 2-inch mesh.

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PART II

TECHNICAL PROVISIONS

SECTION 2A - NOT USED

SECTION 2B

DEMOLITION

1. GENERAL:

1.1 Submittals: The procedures proposed for the accomplishment of salvage and demolition work shall be submitted for approval. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

1.2 General Requirements: The work includes demolition or removal of all construction indicated or specified. All materials resulting from demolition work, except as indicated or specified otherwise, shall become the property of the Contractor and shall be removed from the limits of Government property. Rubbish and debris shall be removed from Government property daily unless otherwise directed so as to not allow accumulation inside or outside the building. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer.

1.3 Dust Control: The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to occupied portions of the building and to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution.

1.4 Protection:

1.4.1 Protection of Existing Work: Before beginning any cutting or demolition work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to insure against damage to existing work to remain in place, to be reused, or to remain the property of the Government, and any damage to such work shall be repaired or replaced as approved by the Contracting Officer at no additional cost to the Government. The Contractor shall carefully coordinate the work of this section with all other work and construct and maintain shoring, bracing, and supports, as required. The Contractor shall insure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this contract.

1.4.2 Protection of Building from the Weather: The interior of the building and all materials and equipment shall be protected from the weather at all times.

1.4.3 Protection of Trees: Trees within the project site which might be damaged during demolition and which are indicated to be left in place shall be protected by a 6-foot high fence. The fence shall be securely erected a minimum of 5-feet from the trunk of individual trees or follow the outer

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perimeter of branches or clumps of trees. Any tree designated to remain that is damaged during the work under this contract shall be replaced.

1.4.4 Environmental Protection: All work and Contractor operations shall comply with the requirements of SECTION: ENVIRONMENTAL PROTECTION.

1.5 Burning: The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.6 Use of Explosives: Use of explosives will be permitted.

1.7 Availability of Work Areas: Areas in which salvage and demolition work is to be accomplished will be available during normal working hours except for restrictions due to burning of pyrotechnics outlined in the Special Provisions and Section 2A of these specifications.

2. EXECUTION:

2.1 Existing Facilities: Disassembly requirements for Building 34-X and 36-X are specified in SECTION: DISASSEMBLY.

2.1.1 Structures, Walls, and Partitions: Existing structures indicated shall be removed as shown on the plans.

2.1.1.1 Building 34-X: Remove column bases to top of pier, entire concrete support structure and sluiceway.

2.1.1.2 Building 36-X: Existing structures shall be removed to top of concrete slab on ground. Steel base supports for truck and compressor hook-ups are to be removed to concrete and salvaged. Concrete piers and pipe sleepers are to be removed to full depth of concrete.

2.1.2 Utilities:

2.1.2.1 Utility Services: Disconnections of utility services shall be included for all structures.

2.1.2.2 Removal of Utilities: Existing utilities shall be removed as indicated. When utility lines are encountered that are not indicated on the drawings, the Contracting Officer shall be notified.

2.2 Filling: Holes, open basements and other hazardous openings shall be filled in accordance with SECTION: EARTHWORK.

2.3 Disposition of Material:

2.3.1 Title to Materials: Title to all salvageable materials and equipment to be demolished shall remain the property of the Government. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

2.3.2 Unsalvageable Materials: Concrete, masonry, and other noncombustible materials other than concrete permitted to remain in place, shall be disposed in the disposal area located on the plant site as designated by the Contracting Officer.

2.3.3 Materials for Government Salvage:

2.3.3.1 Property of the Government: Salvaged items shall be removed in a manner to prevent damage and packed or crated to protect the items from damage while in storage or during shipment. Containers shall be properly identified as to contents. The following items shall be delivered to the areas designated, reserved as property of the Government at no additional cost to the Government: Rocket motor washout structure, control building, and associated piping.

2.3.3.2 Damaged Items: Items damaged during removal or storage shall be repaired or replaced to match existing.

3. PLUGGING OF MONITORING WELLS:

3.1 General Description:

All the monitoring wells are located in Harrison County, Texas. Wells are to be plugged in conformance with rules adopted under the authority of Sections 5.131 and 5.132 of the Texas Water Code entitled: "Water Well Drilling, Completion, Capping, and Plugging." All wells are on government land.

The wells to be plugged consist of 7 ground-water monitoring wells averaging 50 to 60 feet in depth. Locations are shown on the drawings.

3.2 Total Depth:

The total depth of each well averages 50 to 60 feet.

3.3 Plugging Procedure:

All of the removable casing shall be removed from the well and the entire well filled with cement to the land surface.

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SECTION 2C

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REMOVAL AND DISPOSAL OF SLUDGE
AND CONTAMINATED SOIL

1. GENERAL: The method for removal of the sludge from the bottom of the pond and contaminated soil is as follows:

1.1 Liquid shall be removed from pond by others prior to performance of this project. It is possible that a few inches of water may exist in the pond after initial removal. This water shall be removed by the Contractor and disposed in accordance with Section 2D.7.5 of these specifications.

1.2 A chemical drying agent, cement, shall be distributed onto and incorporated into the sludge. A cement dosage of approximately 10 percent by weight is required to produce a truckable cake.

1.3 The dried sludge shall be loaded into lined and covered dump trailer transports and shipped to a suitable disposal site.

1.4 Disposal shall be at a licensed and bonded Hazardous Waste Disposal Site.

The method described above may be altered by the Contractor on written approval of the Contracting Officer if the procedure is considered equal in all respects to the original method. If use of a different drying agent increases the quantity of sludge to be disposed, the contract unit price for removal and disposal will be reduced in proportion with the increased volume.

2. APPLICABLE PUBLICATIONS: Technical Report EPA/CE-81-1, "Procedures for Handling and Chemical Analysis of Sediment and Water Samples", published by the U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.

3. SUBMITTALS: The procedures proposed for accomplishment of the work shall be submitted for approval. The procedures shall include a detailed description of the methods and equipment to be used for each operation and the sequence of operations.

4. DISTRIBUTION OF DRYING AGENT: The drying agent will be delivered to the job site in hopper-bottom transport trailers with pneumatic conveyance equipment. The pneumatic conveyors will be used to deposit the drying agent onto the sludge in the bottom of the pond. Then a low earth pressure crawler tractor will be used to spread the drying agent over the surface of the sludge. The agent will be incorporated by disking, blading, or with a dragline bucket. As discussed in paragraph 1. above, the Contractor may use an alternate procedure to the approach suggested on approval of the Contracting Officer.

5. EXCAVATION AND TRANSPORT: The dried sludge will be removed from the pond with a front-end loader or dragline, then loaded into a lined and covered dump truck for transportation to the point of disposal. Removal of the sludge shall be as necessary to remove all sludge with a Chemical Oxygen

Demand (COD) above a level of 10,000 ug/g. It will be necessary to perform routine analyses for COD to determine the extent of excavation that is required. Sampling and analysis shall be performed in accordance with EPA/CE-81-1. Initial excavation will consist of a 6" thick cut on the entire inside surface of the UEP. After the initial cut, samples will be taken on maximum 2500 s.f. intervals to determine if additional removal is required. Areas that exceed the COD limit will be excavated in subsequent 6" cuts and retested until the limit is reached. The grades for excavation shown on the plans were estimated based on probing and sampling information developed by the Government and may not be verified during sludge removal. However, quantities for sludge disposal included in the proposal forms were calculated from the grades shown on the plans. The Contractor shall provide hazardous wastes shipping manifests approved by EPA for each shipment. Copies executed by the generator, shipper, and disposer shall be forwarded to the Contracting Officer and appropriate state and Federal Agencies.

6. DISPOSAL: Disposal shall be at a licensed and bonded Hazardous Waste Disposal landfill selected by the Contractor. Documentation of the proof of the disposal landfill's capability to dispose of the sludge within applicable State, Federal, and local requirements must be approved by the Contracting Officer prior to excavation of the sludge. Candidate landfills that have been identified as capable of accepting this waste are as follows:

- a. Chemical Waste Management; Port Arthur, Texas
- b. Rollins Environmental Services, Inc; Deer Park, Texas
- c. Chemical and Environmental Conservation Systems; Livingston, Louisiana
- d. Texas Ecologists, Inc.; Corpus Christi, Texas

Identification of the landfills shown above is for information only and shall in no way be considered restrictive on the Contractor for his selection process. Other landfills may be equally well qualified to receive the waste.

7. MEASUREMENT AND PAYMENT:

7.1 Chemical Drying Agent (cement) will be paid for as the number of hundred-weight (CWT) of cement actually distributed and incorporated into the sludge as determined by the Contracting Officer. No measurement will be made for wasted cement or cement used for other than sludge drying. Waybills and certified delivery tickets shall be furnished for all cement. Payment for chemical drying agent shall be considered full compensation for the cement, and for all labor and equipment required to complete the work.

7.2 Excavation and Transport: The quantity of sludge and contaminated soil removed shall be measured in cubic yards based on the percentage of truck or trailer volume of each load transported to the disposal area as recorded on certified trip tickets. Payment for the excavation and transport of sludge and contaminated soil shall be considered full compensation for all labor, equipment, disposal permits, fees, and all other incidentals necessary for the removal, transportation, and disposal of sludge and contaminated soil, except contamination tests which are specified to be paid for separately.

7.3 Contamination tests shall be measured as each test accomplished in accordance with specified procedures as evidenced by certified laboratory reports. Payment shall be considered full compensation for all labor, equipment, and incidentals for sampling and contamination testing.

EARTHWORK

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 the basic designation only.

1.1 Military Standards (Mil. Std.):

MIL-STD-619B	Unified Soil Classification System for Roads, Airfields, Embankments and Foundations
MIL-STD-621A	Test Methods for Pavement Subgrade, Subbase & Notices 1 & 2
	Base-Course Materials

1.2 American Society for Testing and Materials (ASTM) Publications:

C 33-81	Concrete Aggregates
C 117-80	Materials Finer Than 75 um (No. 200) Sieve in Mineral Aggregates by Washing
C 136-83	Sieve Analysis of Fine and Coarse Aggregates
D1140-54 (R 1971)	Amount of Material in Soils Finer Than the No. 200 (75-um) Sieve
D 1556-82	Density of Soil in Place by the Sand-Cone Method
D 2922-81	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D 3017-78	Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
E 548-79	Generic Criteria for Use in Evaluation of Testing and Inspection Agencies

2. DEFINITIONS:

2.1 Classification of Materials: Testing and classifications of materials shall be in accordance with the publications referenced hereinbefore.

2.2 Satisfactory Materials: Satisfactory materials for use as fill or backfill shall be materials classified in MIL-STD-619, as GW, GP, SW, GC, GM, SP, CL, CH, SM, SC, and free from roots and other organic matter, trash, debris, frozen materials, and stones larger than 3 inches in any dimension. Additionally, any material classified as SM shall have not more than 25 percent by weight passing the No. 200 sieve. The material shall be obtained

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from the borrow areas shown or from approved sources outside the limits of Government-controlled land at the Contractor's responsibility.

2.3 Material to be used in constructing the 48-inch compacted clay layer shall be classified in MIL-STD-619 as CL or CH, and shall be obtained from the impervious borrow pit. This material shall have a minimum liquid limit of 30 and a minimum plasticity index of 15. Material to be used as common fill shall be satisfactory fill obtained from the common fill borrow pit.

2.4 Filter materials shall be washed sand, composed of hard, tough, durable particles free from adherent coatings. Filter materials shall be uniformly graded between the limits specified hereinafter. Points on the individual grading curves obtained from representative samples of filter materials not only shall lie between smooth curves drawn through a plot of the tabulated grading limits specified, but also shall exhibit no abrupt changes in slope denoting skip grading, scalping of certain sizes, or other irregularities that would be detrimental to the proper functioning of the filter.

Sand filter material shall be a uniformly graded material conforming to ASTM C33 for fine aggregate for use in concrete production and to the following gradation:

<u>Sieve Size</u>	<u>Percent by Weight Passing</u>
3/8 inch	100
No. 4	95 - 100
No. 10	80 - 100
No. 20	50 - 85
No. 40	25 - 60
No. 100	10 - 30
No. 200	2 - 10

2.5 Unsatisfactory materials shall be materials that do not comply with the requirements for satisfactory materials. Unsatisfactory materials include but are not limited to those materials containing roots and other organic matter, trash, debris frozen materials, stones larger than 3 inches, and materials classified in MIL-STD-619 as Pt, OH, OL, MH, and ML. Unsatisfactory materials also include manmade fills, refuse or backfills for previous construction. Clay shale, although classified as a CL or CH, is not a satisfactory material for fills or backfills.

2.6 Cohesionless and Cohesive Materials: Cohesionless materials include materials classified in MIL-STD-619 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

2.7 Density required by compaction is expressed as a percentage of the maximum density obtained in the laboratory by the test procedure presented in MIL-STD-621, Method 100, compaction effort designation CE 55, abbreviated hereinafter as percent CE 55 maximum density.

2.8 Topsoil shall be the top 6 inches of material designated for stripping as described in paragraph STRIPPING of this section, and which has

been processed to remove brush, stones larger than 2 inches, litter, stumps, roots, and other material that would interfere with planting and maintenance operations.

2.9 Bedding material for riprap shall be a non-woven filter fabric in accordance with Section 2F of these specifications.

2.10 Riprap: Riprap without grout shall consist of sound and durable stone, cobbles or spalls. The material shall have a maximum size of 6 inches and be reasonably well-graded between the maximum size stone permitted and 3-inch stone, with not more than 5 percent by weight smaller than the 3-inch size. The least dimension of a stone shall be considered its size.

2.11 Washed Gravel: Gravel for use in subdrainage system shall be gravel or stone composed of hard, tough, durable particles, free from adherent coatings, with a maximum size of 2-1/2 inches and a minimum size of 1/2-inch. The material shall be washed to remove fines prior to being placed in the trench.

3. SUBSURFACE DATA: The locations of borings are shown on the drawings. Boring profiles are shown in Appendix A of the SPECIAL CONTRACT CLAUSES. Information available for examination or included in the plans and specifications pertinent to subsurface exploration, borings, samples, test pits, and other preliminary investigations, represents only the best knowledge of the Government as to the location, character, or quantity of materials encountered. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, localized variations characteristic of the subsurface materials of this region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of paragraph DIFFERING SITE CONDITIONS of the CONTRACT CLAUSES.

4. CLEARING AND GRUBBING:

4.1 General: The areas requiring excavation shall be cleared and grubbed of trees, stumps, roots, brush and other vegetation, debris, existing foundations, pavements, utility lines, structures, fences, and other items that would interfere with construction operations. Stumps, logs, roots, and other organic matter shall be completely removed. The resulting depressions shall be completely filled with satisfactory material placed and compacted as specified unless further excavation is required.

4.2 Disposal of Cleared and Grubbed Materials: Materials removed and not designated as merchantable timber or salvage materials shall be disposed of in designated waste disposal areas as directed.

5. STRIPPING OF BORROW AREAS: Soil shall be stripped to a depth of 6 inches within the designated excavations and grading lines. Stripping depths shall be measured from the existing contours, as shown on the drawings. Stripped materials, regardless of classification, shall not be used for fill or backfill without prior approval of the Contracting Officer. Topsoil shall be kept free from subsoil, clay lumps, brush, objectionable weed growth, litter, stones larger than 2 inches in diameter, stumps, roots, and other material that would interfere with planting and maintenance

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operations. Topsoil shall be transported and deposited in storage piles convenient to areas that are to receive applications of topsoil later. Excess topsoil, unsatisfactory material and all stripped material shall be disposed of in designated waste disposal areas as directed.

6. CONSTRUCTION PLANS:

6.1 Grading and Excavation Plan: Prior to commencement of excavation, the Contractor shall submit in writing, for the Contracting Officer's information, a Grading and Excavation Plan for earthwork to be accomplished. The plans shall show: The proposed sequence of operations the type, rated capacity, and quantity of equipment to be used in the excavation phase or sequence; plans showing locations and configuration of proposed temporary stockpiles and waste areas; and the drainage and dewatering plans which show the control and removal of surface water and ground water flowing toward and tending to collect in excavations. Excavations shall be made and maintained in accordance with the Grading and Excavation Plan submitted and, if the required results are not obtained, the Contractor shall revise his plans in writing before changing the work procedures. Submission of the plan shall not relieve the Contractor of his responsibilities for excavation.

6.2 Filling and Backfilling Plan: Prior to placement of fill or backfill, the Contractor shall submit in writing, for the Contracting Officer's information, a Filling and Backfilling Plan for work to be accomplished. The plans shall show: The sequence and timing of the proposed backfill operation; the earthmoving and compaction equipment to be used; and the personnel, procedures and equipment to be used for the quality control testing and certification. Filling and backfilling shall be done and maintained in accordance with the Filling and Backfilling Plan submitted and, if required results are not obtained, the Contractor shall halt the filling and backfilling work and revise his plans, in writing, before changing the work procedures. Submission of the plan will not relieve the Contractor of his responsibilities for filling and backfilling.

7. DRAINAGE AND DEWATERING:

7.1 General: Drainage and dewatering shall consist of the control of surface and ground water, regardless of origin, nature, or quantity, flowing toward and tending to collect in, fills, backfills, or excavations. This water shall be controlled in a manner providing effective, continual drainage of excavations, fills and surrounding area. Control measures shall be taken by the time the excavation reaches the ground water level in order to maintain the integrity of the in-situ material. During the excavation, the level of the water shall be maintained continuously below the working level. The Contractor shall provide qualified personnel and equipment, including standby power and pumping equipment, to operate and maintain continuously, water control facilities as required to divert or remove water, from whatever the source, until backfilling is completed.

7.2 Surface Water Control: Diversion ditches, dikes, and grading shall be provided and maintained as necessary during construction to prevent external surface water from entering excavated areas. Precipitation on the slopes and base of excavations shall be controlled in the manner indicated in paragraph Ground Water Control. Surface water shall be directed away from excavation and construction sites so as to prevent erosion and

undercutting of foundations. Excavation slopes and backfill surfaces shall be protected so as to prevent erosion and sloughing.

7.3 Ground Water Control: Ground water flowing toward or into excavations shall be controlled to prevent, sloughing of excavation slopes and walls, boils, uplift and heave in the excavation, and to eliminate interference with orderly progress of construction.

7.4 Exploration: The Contractor may, at his option, perform exploratory work in advance of excavation to provide a basis for selection of appropriate dewatering methods.

7.5 Disposal of Ground and Surface Water: Disposal water shall not pollute lake, stream, pond or other water sources and shall not silt, clog or otherwise damage natural or manmade drainage systems either above or below grade. Water removed from the pond shall be disposed at a licensed and bonded Hazardous Waste disposal facility or absorbed using cement. Transportation and disposal shall be manifested in accordance with EPA requirements with copies sent to the Contracting Officer and appropriate State and Federal agencies.

8. SHEETING, SHORING, BRACING AND PROTECTION: The Contractor bears full responsibility for maintaining the stability of excavated faces, including prevention of sloughing of material from excavated faces, and shall design and provide such sheeting, shoring, and bracing as may be required. The design shall be based on calculation of pressures exerted by and at the condition and nature of the materials to be retained, including hydrostatic pressure and any surcharge imparted to the sides of the excavation. Untreated wood shall not be left in place. Wood left in place shall be treated with oil borne preservatives in accordance with the requirements of Fed. Spec. TT-W-571. The provisions of adequate sheeting, bracing, shoring, sheet piling, cribbing, bulkheads, liner plates, lagging and other protective means shall be considered a subsidiary obligation of the Contractor and no additional payment shall be made therefore. Shoring, bracing, and sheeting shall be removed in a manner to prevent caving as excavations are backfilled.

9. CLASSIFICATION OF EXCAVATION: No consideration will be given to the nature of the soil materials and all excavation will be designated as unclassified excavation. No rock excavation is required.

10. EXCAVATION:

10.1 General: Excavation of every description shall conform to the lines, grades, dimensions and elevations indicated. Excavation below indicated depths will not be permitted except to remove wet, unstable, or otherwise unsatisfactory material. When unsatisfactory material is encountered below the grades shown, the Contracting Officer shall be notified and the material shall be removed as directed and replaced with satisfactory material; payment therefor will be made in conformance with the CHANGES clause of the CONTRACT CLAUSES. Excavation of contaminated soil regardless of classification will be paid for as specified in SECTION: REMOVAL AND DISPOSAL OF CONTAMINATED SOIL. Satisfactory material removed below the depths indicated, without specific direction of the Contracting Officer, shall be replaced at no additional cost to the Government to the indicated excavation grade, with satisfactory materials. Satisfactory material shall be placed and compacted as specified. Determination of

elevations and measurements of approved overdepth excavation of unsatisfactory material below grades indicated shall be done under the direction of the Contracting Officer.

10.2 Excavation for Drainage Trenches: Trenches for underground drain lines shall be excavated to the required alignments, depths, grades, and necessary widths for proper laying of pipe, cables, or ducts. The banks of pipe trenches shall be as nearly vertical as practicable within safety requirements. Care shall be taken not to overexcavate. Excavated materials not required or not suitable for backfill shall be removed and wasted as indicated or as directed. Unless otherwise indicated, excavation shall be by open cut. The bottom of the trenches shall be accurately graded to provide uniform bearing and support for each section of the pipe on undisturbed soil at every point along its entire length, except for the portions of the pipe sections where it is necessary to excavate for bell holes and the proper sealing of pipe joints, and as hereinafter specified. Bell holes and depressions for joints shall be dug after the trench bottom has been graded, and, in order that the pipe rest on the prepared bottom for as nearly its full length as practicable, bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint. Stones shall be removed as necessary to avoid point bearing. Except as specified for wet, unstable, or otherwise unsatisfactory material, overdepths shall be backfilled as and with materials specified for backfilling the lower portion of trenches. Whenever wet, unstable, or otherwise unsatisfactory material that is incapable of properly supporting the pipe, is encountered in the bottom of the trench, such material shall be overexcavated to the depth directed to allow for construction of a stable bearing surface for pipe. The trench shall be backfilled to the proper grade with satisfactory materials. Care shall be exercised to minimize disturbance to the underlying layers during trench excavation.

10.3 Ditches, Gutters, Swales and Channel Changes: Ditches, gutters, swales, and channel changes shall be cut accurately to the cross sections and grades indicated. Roots, stumps, rock, and foreign matter in the sides and bottom of ditches, gutters, swales, and channel changes shall be trimmed and dressed or removed and the finished grades shall conform to the slope, grade, and shape of the section indicated. Care shall be taken not to excavate below the grades indicated. Excessive excavation shall be backfilled to grade either with satisfactory material, compacted as specified, or with suitable stone or cobble to form an adequate gutter paving, as directed. Permanent excavated features shall be maintained until final acceptance of the work. Excavated material shall be disposed of in accordance with paragraph DISPOSITION OF EXCAVATED MATERIALS. No excavated material shall be deposited closer to the edges of the ditches than 3 feet.

11. DISPOSITION OF EXCAVATED MATERIALS: Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required under this section of shall be separately stockpiled if it cannot be readily placed. Materials required to be excavated below the designated depth of stripping and meeting the requirements specified for satisfactory fill or backfill material may be used for fill or backfill with the Contracting Officer's approval. Satisfactory excavated material in excess of that required for the work under this section shall be made available for use in other portions of the permanent site work required

under this contract. Satisfactory material shall be disposed of in designated waste disposal areas. Areas on Government-controlled land not previously used as waste disposal areas shall be cleared and grubbed before disposal of waste material thereon. No satisfactory material shall be wasted or used for the convenience of the Contractor unless so authorized.

12. STOCKPILES: Stockpiles of satisfactory and unsatisfactory material shall be placed and graded as specified herein. Stockpiling of contaminated soil or sludge shall be strictly prohibited. Stockpiles shall be kept in a neat and well-drained condition at all times, giving due consideration to drainage from adjacent properties and the surface shall be sealed by rubber-tired equipment. Excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Areas on Government-controlled land not previously used as stockpile areas shall be cleared and grubbed prior to stockpiling material thereon. Excavated satisfactory material shall be stockpiled in such a manner as to provide free access to the work and to prevent damage to the sides of the excavations. Locations of stockpiles of satisfactory materials shall be subject to prior approval of the Contracting Officer.

13. BORROW: Where satisfactory materials are not available in sufficient quantity from required excavations, approved satisfactory materials shall be obtained from the borrow areas shown. The necessary clearing and grubbing of borrow areas, disposal and, where permitted, burning of debris therefrom, the developing of sources, including any access roads for hauling and the necessary right-of-way, and the satisfactory drainage of the borrow areas, shall be considered as incidental items to borrow excavation. Borrow pits shall be excavated in such manner as will afford adequate drainage. Borrow pits shall be neatly trimmed and left in such shape as will facilitate accurate measurements after the excavation is completed.

14. PROTECTION OR REMOVAL OF UTILITY LINES: Existing utility lines that are shown on the plans or the locations of which are made known to the Contractor prior to excavation and that are to be retained, as well as utility lines constructed during excavation operations, shall be protected from damage during excavation and backfilling and, if damaged, shall be repaired by the Contractor at no expense to the Government. In the event that the Contractor damages existing utility lines that are not shown on the plans or the locations of which have not been made known to the Contractor, report of such damage shall be made immediately to the Contracting Officer. If the Contracting Officer determines that the repairs shall be made by the Contractor, such repairs will be ordered in conformance with the CHANGES clause of the GENERAL PROVISIONS. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time for the necessary measures to be taken to prevent interruption of the services.

15. BLASTING: Blasting will not be permitted.

16. GROUND SURFACE PREPARATION:

16.1 For Fills and Embankments: No stripping will be allowed in the pond area except in the area shown. All native materials designated for cut on the plans and not part of the sludge layer shall be used for pond fill prior to using other material.

16.2 For Backfills: The excavation shall be cleaned of trash, debris and loose soil materials. Surfaces shall be trimmed to dense undisturbed or well compacted materials.

16.3 For Riprap and Bedding Material: Areas on which bedding material and riprap are to be placed shall be trimmed and dressed to conform to the slope lines and grades indicated.

17. PLACING:

17.1 Earth Embankments and Fills: Satisfactory materials shall be used in the construction of earth embankments and in bringing fills to the lines and grades indicated, and for replacing unsatisfactory material. Satisfactory material shall be placed in horizontal layers as specified hereinafter. Oversize material shall be removed prior to placing satisfactory materials in fill and embankment areas. The moisture content of the material to be used for fill and embankment shall be adjusted immediately prior to an in conjunction with compaction to obtain a uniform moisture content as required to obtain the density specified. Uniform distribution of moisture shall be obtained by mixing with disc harrow pulverizers or otherwise manipulating the soil prior to compaction. Material having a moisture content in excess of that which will permit compaction to the density specified shall be dried prior to placing. The surface of each lift shall be scarified to a minimum depth of 2 inches and then lightly sprinkled before the next lift is placed. When compaction is to be accomplished by use of hand or hand-operated machine compactors, the layer thickness of each lift shall not exceed 6 inches in uncompacted thickness. When compaction is to be accomplished other than by hand or use of hand-operated machine compaction, the layer thickness of each lift shall not exceed 8 inches in uncompacted thickness or as specified hereinafter. The first lift of the pond fill shall be placed in a 2-foot thick layer.

17.2 Riprap: Riprap shall be placed in such a manner as to produce a reasonably well-graded mass of rock with the minimum practicable percentage of voids, to the lines and grades indicated. A reasonable deviation as determined by the Contracting Officer from the slope lines and grades shown will be allowed in the finished surface of the riprap, except that either extreme of such deviation 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 manner as to avoid displacing the bedding material. 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. The finished riprap shall be free from objectionable pockets of small stones and clusters of larger stones. Placing riprap in layers will not be permitted. Placing riprap by dumping into chutes or by similar methods likely to cause segregation of the various sizes 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 the Contractor's expense to the lines and grades indicated.

17.3 Backfills: Backfill shall not begin until construction below finish grade has been approved. Backfill shall be brought to indicated finish grade. Backfill shall not be placed in wet or frozen areas. Backfill shall be of satisfactory materials placed and compacted as specified. Movement of construction machinery over pipe shall be at the Contractor's risk. Pipe damaged thereby shall be repaired or replaced at the expense of the Contractor. The Contractor shall be responsible for preventing damage during backfilling.

18. COMPACTION:

18.1 Density: Field inplace density shall be determined in accordance with ASTM D 1556, MIL-STD-621, Method 106 or ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556 or MIL-STD-621, Method 106. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gages shall also be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gages shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer, and as specified in paragraph TESTING.

18.2 Earth Embankments, Fills and Backfills: Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired roller, steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction without pumping or rutting with the equipment used. Each layer shall be compacted to not less than the percentage of maximum density specified below:

<u>Fills, earth embankments, and backfill</u>	<u>Percent CE 55 Maximum Density</u>	
	<u>Cohesive Material</u>	<u>Cohesionless Material</u>
Under turfed areas	85	90
Common fill	Compacted to not less than 90 percent nor more than 95 percent	
Sand filter material	--	95
Gravel for subdrainage system	--	90
Compacted clay infiltration barrier	Compacted to not less than 95 percent nor more than 100 percent.	

18.3 Moisture Control: The moisture content after compaction shall be uniform throughout any one layer of compacted fill. Spreading materials to the maximum lift thickness allowed in the specifications may not be a suitable method for obtaining the specified uniform moisture content. Lift

thickness shall be decreased as necessary and as directed by the Contracting Officer at no additional cost to the Government. Material that is not within the specified moisture limits after compaction shall be completely reworked. The moisture content after compaction shall be within the limits of three (3) percentage points above optimum and two (2) percentage points below optimum moisture content. Material that is too wet shall be spread on the fill and permitted to dry, assisted by disking, until the moisture content is reduced to an amount within the specified limits. When material is too dry, the Contractor shall be required to wet by sprinkling each layer on the fill. Disking to full depth of lift being processed will be required to work the moisture into the material until a uniform distribution of moisture is obtained. If, in the opinion of the Contracting Officer, it is impracticable to obtain the specified uniform moisture content by wetting or drying the material on the fill, the Contractor shall be required to prewet or dry-back the material at the source of excavation or reduce the lift thickness or both, at no additional cost to the Government.

19. PROTECTION: Newly graded areas shall be protected from traffic and erosion. Settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes at no additional cost to the Government. The storage or stockpiling of materials on the finished subgrade will not be permitted. Work shall be conducted in accordance with the environmental protection requirements of the contract. The finished subgrade shall not be disturbed by traffic or other operations and shall be protected and maintained by the Contractor in a satisfactory condition until road or railroad materials are placed. Road or railroad materials shall not be laid until the subgrade has been checked and approved, and in no case shall road or railroad materials be placed on a muddy, spongy, or frozen subgrade. Excavations, fill and backfill, embankments, and foundations shall be protected from frost damage. Displacement damage that occurs from frost action, including the loss of strength or thawing, shall be repaired or replaced as approved at no additional cost to the Government.

20. FINISHING: The surface of excavations, embankments, fills and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The surfaces of embankments or other areas on which a filter course is located shall vary not more than 0.05 foot from the established grade and cross section shown. The surface of other areas shall be within 0.1 foot of the grades and elevations indicated. Surface of the finished subgrade shall not show deviation greater than one-half inch when tested with a 16-foot straightedge applied both parallel and at right angles to the centerline of the area. Gutters and drainage channels shall be finished in such a manner that will result in effective drainage. Surface of areas to be turfed shall be finished to a smoothness suitable for application of turfing materials.

21. TOPSOILING: Areas above the filter course shall be topsoiled. The surface shall be free of materials that would hinder planting or maintenance operations. Topsoil shall then be uniformly spread, graded, and compacted to the thickness, elevations, and slopes shown, and free of surface irregularities. Topsoil shall be compacted by one pass of a culti-packer, roller,

or other approved equipment weighing 100 to 160 pounds per linear foot of roller. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to seeding, planting, or proper grading.

22. TESTING:

22.1 Earthwork Testing: Field tests for density and moisture content shall be performed in sufficient numbers to assure that the specified densities are being obtained. Field tests and laboratory tests to determine moisture-density relations for the same materials, shall be made as specified. Testing shall be the responsibility of the Contractor and shall be performed by an approved independent commercial testing laboratory qualified to conduct and experienced in testing operations of the type required or by the Contractor, subject to approval. Approval of testing facilities shall be based on compliance with ASTM E 548 and no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. The first inspection shall be at the expense of the Government and the cost of any subsequent inspections required because of failure of the first inspection will be paid by the Contractor. Acceptability of qualifications and experience will be as determined by the Contracting Officer. Three copies of test results, including calibration curves and results of calibration tests, shall be furnished to the Contracting Officer within 24 hours of conclusion of physical tests. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the materials shall be removed, replaced and recompacted to meet specification requirements, and retested as specified, at no additional expense to the Government. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

22.1.1 Impermeable Clay Material Liquid Limit and Plastic Limit: One representative test per 500 cubic yards in-place source material.

22.1.2 In-Place Densities: Density tests will be spread out over the area to be tested to assure adequate coverage of the entire area. Tests shall not be taken at the same location on succeeding lifts.

22.1.2.1 One test for every 5,000 square feet, of fraction thereof, of each lift of fill or backfill.

22.1.2.2 One test every lift for each 5,000 square feet of areas to be turfed.

22.1.2.3 One test for every lift of backfill of unstable areas requiring over-excavation and backfill.

22.1.3 Check tests on In-Place Densities: If ASTM D 2922 is used, in-place densities shall be checked by ASTM D 1556 or MIL-STD-621, Method 106, as follows:

22.1.3.1 Two tests for every lift of fill or backfill.

22.1.4 Moisture Contents: In the excavation or borrow areas, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions. During unstable weather, tests shall be made as directed by local conditions and approved by the Contracting Officer.

22.1.5 Optimum Moisture and CE 55 Maximum Density: Tests shall be made for each type material or source of material including borrow material to determine the optimum moisture and CE 55 maximum density values. One representative test for each 1,500 cubic yards of fill and backfill, or when a change in material occurs which may affect the optimum moisture content or CE 55 maximum density.

22.1.6 Tolerance Tests for Subgrades: Continuous checks on the degree of finish specified in paragraph FINISHING shall be made during construction of the subgrades.

23. MEASUREMENT AND PAYMENT:

23.1 Backfill for the evaporation pond closure will be measured in place as the volume between the excavation lines as determined on the basis of a survey made upon completion of the contaminated soil removal operations, and the lines, grades, and slopes of the completed backfill. The measurement will not include the clay barrier cap, and all costs in connection with the cap shall be included in the job sum price for Bid Item No. 5 in the schedule.

23.2 Payment for the evaporation pond closure shall be made at the contract unit price per cubic yard for "Common Fill" which price shall constitute full compensation for foundation preparation, borrow excavation, haul, placement, compaction, and finishing up to the clay barrier.

23.3 Payment for topsoiling and earthwork associated with riprap, subdrainage system, sand filter, and other contract work will not be measured for separate payment and all costs in connection therewith shall be included in the job sum price for Bid Item No. 5 in the schedule.

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TECHNICAL PROVISIONS

SECTION 2E - ESTABLISHMENT OF TURF

1. GENERAL: The turfing work shall be accomplished only when satisfactory results can be expected. When conditions such as drought, excessive moisture, high winds, or other factors prevail to such an extent that satisfactory results are not likely to be obtained the Contracting Officer may, at his own discretion, stop any phase of the work. The work shall be resumed only when, in the opinion of the Contracting Officer, the desired results are likely to be obtained. All turfing operations shall be conducted across the slope. Establishment of turf shall be accomplished on all unpaved graded and disturbed areas that are the result of the Contractor's operations.

2. APPLICABLE PUBLICATIONS: The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

2.1 Association of Official Analytical Chemists (AOAC) Publication:

Official Methods of Analysis.

2.2 Federal Specifications (Fed. Spec.):

O-F-241d Fertilizers, Mixed, Commercial.

3. MATERIALS:

3.1 Fertilizer for fertilizing shall be 20-10-10 grade, Type 1, Class 2, or equal, pelleted, uniform in composition, free-flowing, and suitable for application with approved equipment. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State fertilizer laws, and bearing the name, trade name or trademark, and warranty of the producer.

3.2 Fertilizer for refertilizing shall be Ammonium Nitrate containing 33 percent nitrogen or Ammonium Sulfate containing 21 percent nitrogen, uniform in composition, free flowing, and suitable for application with approved equipment. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State fertilizer laws, and bearing the name, trade name or trademark, and warranty of the producer.

3.3 Seed labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act shall be furnished. Seed shall be furnished in sealed, standard containers unless written exception is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. The seed shall be free of field bindweed, hedgeweed, and nutgrass seed. Seed shall not contain other

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noxious weed seed in excess of the limits allowable under the Federal Seed Act and applicable State seed laws. Seed labeled as mixture or pasture mixture will not be acceptable. Common Bermudagrass seed shall not contain in excess of three percent of giant strains of Bermudagrass. Each seed container shall bear the date of the last germination which date shall be within a period of six months prior to commencement of planting operations.

3.3.1 Seed with the following percentage by weight of pure live seed in each lot shall be furnished. Weed seed shall not exceed one percent.

Kind of Seed		Percent	
<u>Common Name</u>	<u>Scientific Name</u>	<u>of Pure Live Seed</u>	<u>Hulled or Unhulled</u>
Common Bermudagrass	Cynodon dactylon	82	Hulled
Giant Bermudagrass	Cynodon dactylon	80	Hulled
King-Ranch (K-R) Bluestem	Andropogon ischaemum	20	Unhulled

NOTE: $\frac{\% \text{ Purity times } (\% \text{ Germination plus } \% \text{ hard or sound seed})}{100} = \% \text{ pure live seed}$

3.4 Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass, and shall be from a source approved prior to use.

3.5 Sprigs: Healthy, living underground stems (rhizomes) and attached roots of Coastal Bermudagrass without adhering soil shall be furnished. Sprigs shall be obtained from approved sources containing sandy soils where the sod is heavy and thickly matted. The presence of noxious weeds or other material or excessive top growth that might be detrimental to the proposed planting will be cause for rejection. The planting material shall consist of 50 percent by weight of viable rhizomes. All sprigs shall be furnished by the Contractor from approved sources off the site.

3.6 Mulch: Acceptable mulch shall be baled, bright, native prairie hay, broomsedge bluestem hay, King Ranch Bluestem Seed hay, or hay of other grasses and sedges having the equivalent in leafiness, structure and fiber strength. Hay material which has passed through a seed harvesting combine or a thresher will not be acceptable. A minimum of 50 percent of weight of the herbage making up the material shall be 10 inches in length or longer. Mulch material which contains an excessive quantity of mature seed of noxious weeds or other species, including crops which would be detrimental to the grasses planted on the mulched areas or provide a menace to surrounding farm lands, will not be acceptable. Discolored, weathered, brittle hay or any hay harvested during the dormant season will not be acceptable.

4. INSPECTION AND TESTS:

4.1 Fertilizer: Six signed copies of invoices shall be furnished. Invoices shall show quantities and grade of each fertilizer furnished. Samples of each lot of fertilizer shall be tested by the Contractor upon request of the Contracting Officer. Sampling and testing shall be in accordance with Official Methods of Analysis of the Association of Official Analytical Chemists, at the discretion of Contracting Officer. The empty fertilizer bags shall be retained, and upon completion of the project, a final check of total quantities of fertilizer used will be made against the total area treated. If minimum rates of application have not been met, additional quantities of these materials to make up minimum application specified shall be distributed as directed.

4.2 Seed: The Contracting Officer shall be furnished six signed copies of statement from vendor, certifying that each container of seed delivered is labeled in accordance with Federal Seed Act and is at least equal to requirements previously specified. This certification and copies of the official seed analysis or official seed tags shall be obtained from vendor and shall be furnished on or with all copies of seed invoices. Invoices, certifications, and seed analysis shall be furnished prior to commencement of planting operations. Each lot of seed may be resampled and retested, in accordance with latest Rules and Regulations under the Federal Seed Act, at the discretion of the Contracting Officer. Such resampling and retesting shall be made by or under the supervision of the Government. If these retests reveal the seed to be below the specified pure live seed content, the Contractor shall be required to plant additional seed to compensate for the deficiency at no additional cost to the Government. The seed retest will be conducted by the State Seed Laboratory. Allowance will be made for the actual pure live seed content of King Ranch (K-R) Bluestem in determining the actual planting rate.

4.3 Sprigs: Not less than five days prior to the commencement of sprigging operations, the Contracting Officer shall be notified of the off-site sources from which sprigs are to be furnished. Representative samples shall be obtained from each load, and the sprigs from each sample shall be weighed and compared against stolons, weeds, clovers, and other grasses. At least 50 percent (by weight) of the material shall be viable rhizomes. The sprigs will be inspected prior to and during the planting period, and any material that has dried out excessively, is non-viable, or is not at least equal to requirements previously specified will be rejected. Contractor shall furnish a signed and dated certificate from the sprig supplier that the sprigs are of the Coastal Bermudagrass variety.

4.4 Mulch: Not less than five days prior to commencement of mulching operations the Contracting Officer shall be notified of sources from which mulch materials are available and the quantities thereof. Representative samples of the material proposed for used shall be submitted for approval. A weight certificate signed by a public weigher shall be furnished for each load of mulch used on the site. The weight certificates shall be furnished prior to applying the mulch. The mulch material shall be unloaded and stacked in an orderly manner.

5. REPAIR WORK shall be done on the slopes of areas where gullies four inches or deeper have occurred, as required by the Contracting Officer. The entire fill in gullies shall be compacted by the tractor wheels as the soil is placed and spread. Repairs shall be accomplished on slopes damaged prior to or during accomplishment of turfing work. The damaged slopes shall be repaired to re-establish the condition and grade of the soil prior to the damage as directed by the Contracting Officer. Repair work shall be done to the extent and at the locations directed by the Contracting Officer. Repair work shall be done before fertilizing operations are begun. Reseeding shall be accomplished on previously seeded areas after repairs are completed.

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9. APPLICATION OF FERTILIZER:

9.1 General: Fertilizer shall not be applied more than 24 hours in advance of tilling operations. The fertilizer distributor box shall be equipped with baffle plates to prevent downward movement of fertilizer when operating on the slope. Fertilizer shall be distributed with a fertilizer distributor (Ezee Flow) or approved equal at the rate and in the manner specified hereinafter.

9.2 Application Rate: Fertilizer shall be uniformly distributed at the rate of 600 pounds of 20-10-10 per acre prior to tilling.

9.3 Refertilizing: The planted areas shall be refertilized three weeks after commencement of maintenance operations. Fertilizer shall be applied at the rate of 250 pounds of Ammonium Nitrate or 400 pounds of Ammonium Sulfate per acre using a fertilizer distributor (Ezee Flow or equal). Fertilizer shall be applied when the vegetation is dry. The refertilized areas shall be watered as specified for MAINTENANCE OF TURFING WORK within 24 hours following refertilizing operations.

10. PREPARATION OF GROUND SURFACE:

10.1 General: Equipment, in good condition, shall be provided for the proper preparation of the ground. Equipment shall be subject to approval before work is started.

10.2 Clearing: Prior to grading and tilling, vegetation that may interfere with operations shall be mowed, grubbed, and raked. The collected material shall be removed from the site. The surface shall be cleared of stumps, and stones larger than 3 inches in diameter, and roots, cable, wire, and other materials that might hinder the work or subsequent maintenance shall also be removed.

10.3 Grading: Previously established grades shall be maintained on the areas to be treated in a true and even condition, and necessary repairs smooth condition to prevent formation of depressions. Areas having inadequate drainage as indicated by the ponding of water near driveways or on other areas shall be filled or graded to drain as directed by the Contracting Officer. Ruts, deep tracks, dead furrows, and ridges shall be

eliminated and the necessary replanting accomplished prior to acceptance of the completed work.

10.4 Tillage: After the areas have been brought to the grades shown, tillage shall be accomplished in such manner as to destroy existing vegetation and to prepare an acceptable seed bed. The Contractor shall utilize tractors with adequate horsepower and heavy duty tillage equipment in accomplishing the specified tillage operations. All areas shall be tilled with a heavy duty disk or chisel type breaking plow followed by disking with a disk harrow, and smoothing with a weighted spike tooth harrow, railroad irons, or bridge timber float drag. When a chisel plow is used the chisels shall be set not to exceed 10 inches apart, and the areas shall be cross or double tilled. Areas shall be left smooth for ease of mowing. Depth of tillage shall be four inches.

11. NOT USED.

12. SPRIGGING:

12.1 Obtaining and Handling Sprigs: Sprigs shall be obtained from areas as close as possible to the planting site. Weeds and excess grasses shall be mowed to a height of three inches, and raked and removed before harvesting begins. Limited areas or blocks shall be harvested so that the maximum amount of sprigs will be harvested from each area or block in a continuous operation, and once the area is abandoned, no more sprigs shall be harvested from this area until detached sprigs are removed. Harvesting shall be accomplished by any acceptable method, including crisscross cultivation, shallow plowing, or disking to loosen the sprigs from the soil and to bring them to the surface. Sprigs shall be collected and bunched for loading by raking with a side-delivery rake. Sprigs shall be gathered into small piles as soon as they are harvested and kept moist until planted. The harvesting and planting operations shall be balanced, taking every care possible at the harvesting site that sprigs do not lie in the sun longer than 30 minutes before they are covered and moistened. After the truck or trailer has been loaded, the sprigs shall be watered thoroughly and completely covered with two thicknesses of wet burlap and a tarpaulin prior to leaving the harvesting site. The sprigs shall be watered as often thereafter as necessary to keep the planting material viable until planted. The sprigs shall be kept completely covered with wet burlap and a tarpaulin until planted, and they shall be stored adjacent to a water supply for ease of watering.

12.2 Care of Sprigs: Not more than 48 hours shall elapse between the harvesting operations and planting the sprigs except that when adverse weather or other uncontrollable conditions interrupt the operations. The time interval between harvesting and planting may be extended by the Contracting Officer, provided the sprigs are still viable. Sprigs in stockpiles and on trucks shall be examined thoroughly at least twice daily for indications of heating. If heating occurs the stockpiles shall be moved with pitchforks, watered and covered. If heating occurs while the sprigs are still on the truck, they shall be unloaded, watered and covered. This procedure shall be repeated as often as necessary to prevent damage from heating until the sprigs are planted. Sprigs that have been damaged by heating or drying out will be rejected and removed from the site.

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12.3 Planting Sprigs: A satisfactory method of sprigging shall be employed, using approved mechanical power-drawn sprigging machines or other approved methods. When sprigging machines are used, markers or other means shall be provided to insure that the successive sprigged strips will overlap or be separated by a space no greater than the space between rows planted by the equipment being used. The interval between dropping sprigs and covering with soil shall not exceed 10 minutes. Sprigs shall be planted during a season when satisfactory results may be expected.

12.3.1 Hand Sprigging: Tractors equipped with a moldboard type breaking plow or team drawn moldboard plows shall be used in planting operations. Furrows shall be opened approximately across the slope. Furrows shall be opened to a depth of 3 to 3-1/2 inches and the distance between the furrows shall not exceed 14 inches. Viable Bermudagrass sprigs shall be dropped at not to exceed 12-inch intervals in the furrow. Opening of the furrows shall commence at the toe or bottom of the slope and the soil shall be turned down the slope with successive furrows covering the previously opened furrow after the sprigs have been dropped. Plowing shall be done in such a manner that the entire area to be sprigged shall be flat broken or completely plowed as a part of and in connection with the sprigging operations in addition to tilling specified in the preparation of the ground surface.

12.3.2 Machine Sprigging: At the Contractor's option, sprigs may be planted with an approved sprig planter. The sprig planter shall be a one row sprigging machine (H. L. Pray or approved equal) with three point hitch attachment. Sprigs shall be planted to a depth of 3 to 3-1/2 inches and at not more than 6-inch intervals in rows spaced 18-inches apart. Sprigs shall be covered as they are dropped. If the tractor and planter cannot be operated on steep slopes in such manner as to maintain an 18-inch row spacing, the planting equipment shall be anchored to trucks or other equipment to obtain uniform spacing of rows, or the areas shall be hand sprigged as specified above. Sprigging shall be accomplished across the slope.

12.4 Compacting Sprigged Areas: The sprigged areas shall be compacted as a part of the sprigging operations at no additional cost to the Government. As sprigging operations are completed on any portion of the area to be sprigged, the soil shall be compacted with a smooth surface roller or vibration seeder weighing not less than 50 to 90 pounds per foot of width. Compaction of the sprigged areas shall be done prior to seeding and in all cases not later than four hours after the sprigs have been planted. Equipment used for compacting shall be adjusted and weighted in such manner to achieve the desired results without uncovering the sprigs, as directed by the Contracting Officer. All areas shall be left smooth for ease of mowing.

13. PLANTING SEED:

13.1 General: The Contractor shall conduct seeding equipment calibration tests in the presence of the Contracting Officer as a means of determining the equipment setting to plant the seed at the specified rates. If unplanted skips and areas are noted after germination and growth of the

grass, the Contractor shall be required to seed the unplanted areas with the grass or grasses that were to have been planted at no additional cost to the Government. Seed boxes shall be kept at least half full during seeding operations to insure even distribution of seed over all the areas seeded. Seeding equipment operating on slopes shall be anchored, as required, to prevent downward movement of the equipment and formation of ridges and ruts.

13.2 Seeding: The equipment to be used and the methods of planting shall be subject to the inspection and approval of the Contracting Officer prior to commencement of planting operations. The seed shall be planted at the rates and with the equipment specified as follows:

13.2.1 Seeding Rate: Seed shall be planted at the rate of 4 pounds of Pure Live Seed (PLS) King Ranch Bluestem, 20 pounds of Common Bermudagrass, and 10 pounds of Giant Bermudagrass per acre. The seed shall be planted using a native grass seed drill. The Common Bermudagrass and Giant Bermudagrass shall be uniformly mixed in the presence of the Contracting Officer and planted through the small seed box. The King Ranch Bluestem shall be planted through the chaffy seed box. Depth of planting the seed shall be 1/2 to 3/4 inch. The seed shall be planted after fertilizing, tilling and sprigging and prior to mulching and anchoring mulch. Disks and seed spouts on the native grass seed drill shall not be spaced more than 10 inches apart. The disks shall be equipped with depth control bands.

13.3 Protection: The seeded areas shall be protected against traffic or other use by erecting barricades immediately after seeding is completed and by placing warning signs of a type approved by the Contracting Officer on the various areas. Such protective devices shall be maintained until completion of all work under this contract.

14. MULCHING:

14.1 Applying Mulch: Mulch shall be spread uniformly in a continuous blanket, using 2 tons per acre. Mulch shall be spread by hand or by an approved blower-type mulch spreader. Blower-type mulch spreaders shall be adjusted and operated in such manner to prevent excessive breakage of the mulch material. If this cannot be accomplished, the mulch shall be spread by hand. Care shall be exercised to insure that all wire from baled hay is collected as it is removed from the bale and then removed from the site. Mulching shall be started at the windward side of relatively flat areas, or at the upper part of a steep slope, and continued uniformly until the area is covered. The mulch shall not be bunched.

14.2 Anchoring Mulch: Immediately following spreading, the mulch shall be anchored in the soil to a depth of two to three inches. An approved machine equal to a disk harrow with cupped disks removed and replaced with straight rolling coulters spaced not more than eight inches apart and having edges approximately 1/8 inch wide shall be used to anchor the mulch. The machine shall be weighted and operated in such manner to secure the hay firmly in the ground to form a soil-binding mulch and prevent loss or bunching of the hay by wind. The mulch anchoring machine shall be as manufactured by the Finn Equipment Co. of Cincinnati, Ohio, or approved

equal. The mulch machine shall be anchored as required to prevent downward movement of the equipment and the formation of ridges and ruts. Suitable anchoring equipment shall be on hand and ready for use prior to applying the mulch. The coulters shall be at least ten inches in diameter. Mulch shall be secured within 24 hours after seeding. The number of passes needed, not to exceed three, will be determined by the Contracting Officer.

14.3 Maintenance of Mulched Areas: Mulch shall be maintained until all work or designated portions thereof have been completed and accepted. Maintenance shall consist of providing protection against traffic by erecting barricades and placing warning signs as specified in paragraph: PLANTING SEED. Any damage shall be repaired, and mulch material that has been removed by wind or other causes shall be replaced and secured.

15. WATERING:

15.1 Initial Watering: Water shall be applied to the planted areas following mulch anchoring operations. Such watering shall be within 12 hours after commencement of sprigging, seeding and mulching operations on each portion of an area to be planted. If the soil is extremely dry prior to planting, watering of the areas 48 to 72 hours in advance of planting may be required if deemed necessary by the Contracting Officer. Water shall be applied using portable aluminum pipelines with rotating sprinklers. The sprinklers shall not be spaced in excess of 40 feet apart. Water shall be applied to the planted areas at a rate sufficient to insure thorough wetting of the soil to a depth of four inches over the entire planted area which will usually require a minimum of 27,000 gallons per acre. The actual rate will be determined by the Contracting Officer at the time of watering. Watering operations shall be discontinued during and following effective rains and resumed as directed by the Contracting Officer. Watering operations shall be properly supervised to prevent run-off of water. The Contractor shall supply all pumps, hoses, pipelines and sprinkling equipment. The Contractor shall have adequate equipment available for watering operations prior to commencement of planting operations. The Contractor shall repair areas damaged by watering operations at no cost to the Government. All water shall be kept free from oil, acids, alkali, salts, and other substances harmful to the growth of grass.

15.2 Rewatering: On each area specified to be watered, four rewaterings shall be required after the initial watering, when such rewatering is deemed necessary by the Contracting Officer. Rewatering shall be at the same rate and applied in the same manner as specified for the initial watering. Rewaterings shall be completed prior to the end of the 45-day maintenance period.

16. MAINTENANCE OF TURFING WORK:

16.1 General: It shall be the responsibility of the Contractor to maintain planted areas during the planting period and for an additional period of not less than 45 calendar days. Maintenance work shall be accomplished until a stand of grass is present. Maintenance shall consist of watering, replanting, mowing, maintaining existing grades, and repair of

erosion damage. Areas on which an acceptable stand of grass is not present at the end of the 45 day period shall be maintained by the Contractor until an acceptable stand of grass is present at no additional cost to the Government.

16.2 Replanting: Areas on which a stand of growing grass is not present in a reasonable length of time (Bermudagrass seed should be germinating in 6 to 8 days) shall be reseeded as specified for the original planting and shall continue to be replanted throughout the maintenance period until a stand is obtained. A stand shall be defined as live grass plants from seed occurring at the rate of not less than 6 growing plants per square foot and growing grass from sprigs at 18-inch intervals in rows spaced 18 inches apart.

16.4 Maintenance of Grades and Repair of Erosion Damage: It shall be the responsibility of the Contractor to maintain the original grades of the planted areas after commencement of planting operations and during the specified maintenance period. Any damage to the finished surface from Contractor's operations shall be promptly repaired. In the event erosion occurs from either watering operations or from rainfall, such damage shall be promptly repaired. Ruts, ridges, tracks, and other surface irregularities shall be corrected and areas replanted where required prior to acceptance.

17. MOWING: Two mowing of all planted areas shall be accomplished on planted areas when the soil is dry and when deemed necessary by the Contracting Officer. The exact time of the mowing will be determined by the Contracting Officer. Mowing of the vegetation shall be to a height of 5 to 6 inches and shall be accomplished with a tractor drawn rotary type mower. The clippings shall be left evenly distributed over all the mowed areas. Mowing shall be conducted in such manner as not to cause damage to slopes. Mowings shall be completed prior to the end of the 45-day maintenance period.

18. PAYMENT: No payment or partial payment will be made for work covered by this section of the specifications until all portions of this section, including maintenance of turfing work, are adequately performed and accepted, as determined by the Contracting Officer.

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SECTION 2F

SUBDRAINAGE SYSTEM

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 the basic designation only.

1.1 American Society for Testing and Materials (ASTM) Publications:

D 3034-80 Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings

D 3212-76 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

2. **DELIVERY, STORAGE, AND HANDLING OF MATERIALS:**

2.1 **Delivery and Storage:** Materials delivered to site shall be inspected for damage, unloaded, and stored with the minimum of handling. Do not store materials directly on the ground. Inside of pipes and fittings shall be kept free of dirt and debris. During shipment and storage, filter fabric shall be wrapped in burlap or similar protective covering. The storage area should be such that the fabric is protected from mud, soil, dust, and debris.

2.2 **Handling:** Materials shall be handled in such a manner as to insure delivery to the trench in sound undamaged condition. Pipe shall be carried to the trench not dragged. Plastic materials that are not to be installed immediately shall not be stored in the direct sunlight.

3. **SUBMITTALS:**

3.1 **Samples:** Samples of filter fabric, pipe and fittings shall be submitted and approved before work is started.

3.2 **Certificates:**

3.2.1 **Filter Fabric:** The Contractor shall furnish the Contracting Officer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the fabric, certifying that the fabric meets the chemical, physical, and manufacturing requirements stated in this specification.

3.2.2 **Pipe:** Certified copies of test reports demonstrating conformance to applicable pipe specifications shall be submitted before any drain pipe is installed.

4. **TESTS FOR PIPE:** Certified copies of test reports demonstrating conformance to applicable pipe specifications shall be delivered to the Contracting Officer before pipe is installed.

5. **PIPE JOINTS AND FITTINGS:** Pipe shall conform to requirements of ASTM 3034, Type PSM, SDR 35, with flexible elastomeric seal joints. Joints shall

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conform to ASTM D 3212. Fittings shall conform to ASTM D 2467. Perforations in pipe shall be circular, not more than 3/8 inch or less than 3/16 inch in diameter, and arranged in rows parallel to the longitudinal axis of the pipe. Perforations shall be spaced at approximately 3 inch center-to-center along rows. The rows shall be approximately 1 1/2 inch apart and arranged in a staggered pattern so that all perforations lie at the mid-point between perforations in adjacent rows. The rows shall be spaced over not more than 90 degrees of circumference.

6. SAND FILTER MATERIAL: Sand filter material shall be furnished in accordance with Section 2D 2.4 of these specifications.

7. WASHED GRAVEL: Washed gravel shall be furnished in accordance with Section 2D 2.11 of these specifications.

8. FILTER FABRIC: Filter fabric shall be a pervious sheet of ~~polyester~~, nylon, or polypropylene filaments woven or otherwise formed into a uniform pattern with distinct and measurable openings. The filter fabric shall provide an Equivalent Opening Size (EOS) no finer than U.S. Standard Sieve No. 100 and no coarser than Sieve No. 70. EOS is defined as the number of the U.S. Standard Sieve having openings closest in size to the filter fabric openings.

9. PLACING PIPE: Each pipe shall be carefully examined before being laid, and defective or damaged pipe shall not be used. Pipelines shall be laid to the grades and alignment indicated. Trenching for drainage pipe shall be in accordance with SECTION: EARTHWORK. Proper facilities shall be provided for lowering sections of pipe into trenches. 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. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. All pipe in place shall be inspected before backfilling, and those damaged during placement shall be removed and replaced at no additional cost to the Government.

10. BACKFILLING, COMPACTION, AND TESTING: Backfilling, compaction, and testing shall be in accordance with SECTION 2D - EARTHWORK.

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SECTION 2G

DISASSEMBLY

PART 1 - GENERAL

1. GENERAL:

1.1 General Requirements: The work includes the disassembly of Building 34-X and 36-X as indicated on the drawings and as herein specified. All materials and equipment which are part of the disassembly shall remain the property of the Government. All disassembled items are to be marked and stored in the immediate area as designated by the Contracting Officer, unless otherwise directed to be moved and stored at a location on Longhorn AAP. All scheduled items are to be crated.

1.2 Protection: Before beginning any cutting, disassembly, or demolition work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to insure against damage to existing work to remain in place, to be reused, or to remain the property of the Government. In no case will the free fall of any member or equipment be permitted. Any damage to such work shall be repaired or replaced as approved by the contracting officer at no additional cost to the Government.

PART 2 - EXECUTION

2. EXISTING FACILITIES:

2.1 Utilities:

2.1.1 Utility Services: Disconnection of electrical and water service shall be done prior to any disassembly or demolition work. Refer to the drawings for locations of service termination. The Government shall provide for termination of electrical service to power poles upon notification of the Contractor.

2.1.2 Removal of Utilities: Existing utilities shall be removed as indicated and as herein specified. When utility lines are encountered that are not indicated on the drawings, the Contracting Officer shall be notified.

2.1.2.1 Building 34-X:

a. Electrical:

(1) Disconnect all electrical power and remove drop service line from Power Pole 7/261 to Panel Box "B" attached to the rocket motor washout facility.

(2) Disconnect all wires to light fixtures at junction boxes and remove all (18) fixtures and junction boxes. Store for re-use.

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(3) Disconnect electrical lines to $\frac{1}{4}$ Hp rotating motor and to 1 Hp transverse motor. Remove both motors.

(4) Disconnect all electrical lines to meter panel.

(5) Disconnect all electrical lines at pull box. Remove wire from pull box to meter panel.

(6) Disconnect electrical lines at hand hole. Remove lines from hand hole to pull box.

(7) Disconnect electrical lines at J-box in Building 36-X. Remove wire to hand hole.

(8) Cut 3-inch conduits at ground level and detach from meter panel.

(9) Detach and remove meter panel from structure.

(10) Disconnect all conduit or electrical lines between beams and columns and remove. All lines attached to either beams or columns are to remain attached.

(11) Disconnect underground service to Panel Box "B" at panel box.

(12) Disconnect 1-inch conduits to panel box, cut conduit at ground level. Remove panel Box "B".

(13) Disconnect speaker from column. Remove and store for reuse.

b. Piping:

(1) Loosen set screws on pillow block connecting main shaft at trolley.

(2) Disconnect trolley assembly from main shaft and 2-inch diameter XXHVY-API-5L pipe. Remove trolley from monorail.

(3) Disconnect 2-inch diameter line at reducer. Remove and store 2-inch diameter swivel pipe assembly.

(4) Cut 3-inch diameter XXHVY-API-5L pipe where shown. Remove for re-use.

(5) Remove 3-inch 2500# ASA R.T.J. W.N FL6 & VA. from Line A7 high pressure hook-up at truck bay. Store for re-use.

(6) Cut balance of 3-inch diameter XXHVY-API-5L pipe into 40'-0" lengths. Collect for salvage.

(7) Cut 3-inch Schedule 40 pipe into 40'-0" lengths. Collect for salvage.

(8) At valve box, remove 6-inch wedge gate valve and 6" x 6" x 3" flanged reducing tee. Store for re-use.

(9) Disconnect 1½-inch diameter Schedule 40 air line from drip leg at base of column and at end of 1-inch Type Y strainer. Retain strainer and regulator as one assembly. Store for re-use.

(10) Remove 2 - 3-inch wedge gate valve from air line. Store for re-use.

(11) Disassemble air lines in maximum 40'-0" lengths. Collect for salvage.

(12) Remove 3-inch wedge gate valve assembly from compressor hook-up and store for re-use.

(13) Salvage 8-inch channel pipe supports at truck and compressor hook-ups.

c. Equipment: Remove the following equipment as complete units and store as directed by the Contracting Officer.

- (1) Strainer
- (2) Strainer Dolly
- (3) Harness Assemblies TX174, TX175, and XM-53
- (4) Spreader Bars (2)
- (5) Five Ton Hoists (2)
- (6) Ten Ton Crane
- (7) Nozzles (located in Building 36-X)
- (8) Strainer Dolly Steel Runway Channels (2)
- (9) Varedyne Unit (Building 36-X)
- (10) High Pressure Pump (Building 36-X)

d. Crating: The following items are to be tagged and marked prior to crating. The crate is to be tagged and marked with the inventory it contains:

- (1) Light Fixtures (18)
- (2) ½ Hp Rotating Motor
- (3) 1 Hp Transverse Motor
- (4) Meter Panel
- (5) Panel Box "B"
- (6) Speaker
- (7) Monorail Trolley

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- (8) 6" Wedge Valve
- (9) Airline Strainer and Regulator
- (10) 3" Wedge Gate Valves (3)
- (11) Five TDW Hoists (2)
- (12) Nozzles
- (13) Varidyne Unit
- (14) High Pressure Pump

e. Rocket Motor Washout Structure: All bolted members are to be disassembled by the removal of the connecting bolts. No bolted connections are to be disassembled by burning with torches. Braces attached by welded connections are to be flame cut three (3) inches from their point of attachment. Prior to disassembly, each member is to be identified with a painted yellow circled number as shown on the drawings along the middle of the member. The ends of each member are to be painted with the number corresponding to the circled number of the member to which it was connected. All bolts, washers, and nuts removed during the disconnection are to be reattached to the disconnected member. Nuts and washers removed from column bases are to be reattached to the holes in the base plate with number 9 wire. Braces, connection angles, and spacers are to remain attached to members where shown on the drawing.

(1) Disconnect 1½-inch angles (4) from 6-inch monorail I-beam. Disconnect monorail beam from rear column and from two overhead 6-inch beams. Remove monorail beam. Do not remove spacer.

(2) Disconnect and remove 2-inch angle bracing to rear monorail support column.

(3) Cut 2-inch pipe bracing supporting rear column at base of deck. Remove bolts securing column and remove column with pipe braces and upper outrigger beams.

(4) Remove 4-inch "T" braces from 6-inch columns and 6-inch monorail beam. Remove two 6-inch beams supporting monorail beam from columns. Do not remove braces.

(5) Remove X braces between 6 and 8-inch columns.

(6) Remove two (2) 6-inch columns.

(7) To remove pipe cage assembly, remove 1-inch bolts securing assembly to base at "TW-B", "A-R", "A-FWD", "A-AFT", and "C-FWD". Remove as one unit including motors.

(8) Remove 4 - 3/8-inch bolts securing 3-inch pipe guide to seal on outlet collector. Remove outlet collector and 3-inch guide pipe.

(9) Railings: All railings are to be removed in sections by cutting welds at connection of rails and posts to structure. Sections are not to be further disassembled.

(10) Remove 16 - 1-inch nuts retaining two (2) - 6-inch WF sections to concrete base. Cut weld at base of spacer at end of beam and remove beams. Do not remove spacers from beams.

(11) Grating: Remove 10 sections of grating from upper deck. Remove 8 sections of grating from lower deck. Remove 4 section below lower deck.

(12) Stairs from lower to upper deck are to be removed in two sections each. Outer 10-inch channel stringers are to be unbolted from columns and lower deck. Inner stringer is to be cut opposite center supporting column. Cut weld securing tread to column. Remove stair sections.

(13) Remove bolts securing lower deck stairs to lower platform and concrete base and remove stairs.

(14) Remove 6-inch channels separating 6-inch beams. Disconnect 6-inch beams from deck stringers.

(15) Remove two braces supporting cantilevered lower deck from column. Disconnect 8-inch channel stringers from column and remove section of deck framing as one unit assembly.

(16) Remove 3/4-inch bolts securing 2 1/2-inch bracing angles supporting rear of lower deck from concrete pier. Remove 3/4-inch bolts securing 6-inch channel stringer from concrete pier. Remove rear section of lower deck as one unit.

(17) Remove 3/4-inch diagonal bracing.

(18) Remove three 8-inch beams on upper deck.

(19) Remove four - 4-inch braces from columns to upper deck framing.

(20) Remove four - 12-inch framing deck beams. Do not remove 3-inch angles secured to top of beams.

(21) Remove two - 6-inch beams between 8-inch columns.

(22) Remove 1-inch nuts retaining columns to footing and remove four - 8-inch column.

(23) Remove hook bolts anchoring 40 pound crane rails to 16-inch beams. Remove rails.

(24) To remove upper 10-inch beams from craneway, cut weld on lower beam plate at connection to column. Cut weld along upper plate connecting plate to beam. Remove bolts securing beam clip angles to column. Do not remove clip angles from beam. Remove four (4) beams.

(25) Cut 3-inch angle knee braces from 16-inch upper craneway beams. Remove bolts securing beams to column haunch and lower six (6) beams.

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(26) Remove bolts connecting intermediate 8-inch beams to columns. Do not remove clip angles from beams. Remove six (6) beams.

(27) Remove 1-inch nuts from columns and remove eight (8) - 10-inch columns.

f. Concrete Removal: Reference section on Demolition.

- (1) Remove all concrete to sluiceway.
- (2) Remove all concrete column footings to top of drilled pier.
- (3) Remove entire concrete support structure.

2.1.2.2 Building 36-X:

a. Electrical:

(1) Disconnect all electrical power and remove drop service line from Power Pole 7/258 to Panel Box "A".

(2) Remove all electrical lines and conduit used between light fixtures, outlet receptacles, switches, junction boxes and panel box.

(3) Remove four (4) exterior 300 watt lighting fixtures. Tag and crate.

(4) Remove six (6) interior fluorescent light fixtures. Tag and crate.

b. Building Disassembly:

(1) Windows and Doors: Remove and salvage for re-use.

(2) Roof: Remove aluminum ridge roll and closure strips. Remove corrugated aluminum roofing panels. Remove 1-inch x 2-inch aluminum eave angle. Salvage for re-use.

(3) Siding: Remove flat metal panels from southwest side of building. Salvage for re-use. Remove and dispose of wood framing behind panels. Remove corner flashing. Remove all corrugated aluminum siding and salvage for re-use.

(4) Purlins: Remove 2" x 4" purlins between roof trusses. Salvage for re-use.

(5) Trusses: Remove and salvage for re-use.

(6) Walls: Brace opening at base of door. Remove all nuts from anchor bolts at floor plate. Remove and salvage walls in four (4) section. Cut anchor bolts flush to slab.

(7) Concrete Pad: Remove pad to top of slab.

2.1.2.3 Tags:

a. Each item to be crated is to be tagged with a white "G" grade 13 point, 100% chemical wood pulp stock tag with 12"-26 gauge double wire. Each tag shall be marked with black indelible ink and identify the item and the building from which it was removed.

2.1.2.4 Crates:

a. Material:

(1) Crates are to be constructed of wood. Sides and top shall be 3/4" C-D plywood or 1" dense commercine southern pine decking, surfaced dry with a maximum moisture contents of 19 percent. Decking and 2 x 4 lumber used on pallet shall be No. 2 hardwood.

(2) Nails: Use 8d common in 3/4" material and 10d in 1" material. Space all nails 6" on center.

b. Execution:

(1) Crates are to be fabricated with tight joints. Knot holes or gaps between planks will not be permitted.

(2) Each item to be crated must be tagged. The tag shall be attached to the item and shall identify (1) the item and (2) the building from which it was removed.

(3) Each tagged item placed in crates shall be packed with seltzer, styrofoam "Pop Corn", or other similar packing material used to protect the product during handling and shipping.

(4) Each sealed crate shall have painted on the front vertical panel, the number of the building from which the contents were removed and the box number. The letters and numbers shall be gothic, stenciled with black paint and shall be three inches tall. The word "FRONT" is also to be stenciled on the front of each crate in two inch tall letters.

(5) Each sealed crate shall have a clear poly front envelope adhesively applied to the front of each crate. The envelope shall be window style, back loading, totally waterproof, and 5 1/2" x 4" in size. The envelope shall have printed across the top in bold letters, "PACKING LIST ENCLOSED". The packing list to be inserted into the envelope will be the original from a three-part list and it shall list the items contained in the crate. A copy of the packing list is to be returned to the Contracting Officer.

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DEPARTMENT OF THE ARMY
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

001179

REPLY TO
ATTENTION OF

HSHB-M

26 OCT 85

SUBJECT: Solid Waste Consultation No. 38-26-0498-86, Sanitary Landfill
Closure Plan, Longhorn Army Ammunition Plant, Marshall, Texas,
16-18 September 1985

Commander
US Army Materiel Command
ATTN: AMCSG
5001 Eisenhower Avenue
Alexandria, VA 22333-0001

EXECUTIVE SUMMARY

1. The purpose and a summary of the recommendations of the enclosed report follow:

a. Purpose. To develop guidelines for a closure plan for the active sanitary landfill at Longhorn Army Ammunition Plant (LHAAP).

b. Recommendation. To ensure regulatory compliance, develop a detailed closure plan based on the landfill closure guidelines.

2. Additional copies of report are enclosed for mailing to HQDA(DAEN-ZCF-U/DAEN-ZCE), and Comdt, Academy of Health Sciences, (HSHA-IPM).

FOR THE COMMANDER:

Encl

for Richard L. Daubel, CPT, MS
KARL J. DAUBEL
Colonel, MS
Director, Environmental Quality

CF:

HQDA(DASG-PSP) (w/enc1)
Cdr, HSC (HSCL-P) (w/enc1)
Cdr, MEDDAC, Ft Hood (PVNTMED Svc) (2 cy) (w/enc1)
Cdr, BAMC (PVNTMED Svc) (w/enc1)
Cdr, AMCCOM (AMSMC-SG) (w/enc1)
Cdr, LHAAP (SMCLD-EN) (2 cy) (w/enc1)
Cdr, USATHAMA (AMXTH-TE) (w/enc1)
Cdr, USAEHA Fld Spt Actv, Ft McPherson (w/enc1)

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**UNITED STATES ARMY
ENVIRONMENTAL HYGIENE
AGENCY**

ABERDEEN PROVING GROUND, MD 21010-5422

SOLID WASTE CONSULTATION NO. 38-26-0498-86
SANITARY LANDFILL CLOSURE PLAN
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS
16-18 SEPTEMBER 1985

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Distribution limited to US Government agencies only;
protection of privileged information evaluating another
command; Dec 85. Requests for this document must be
referred to Commander, Longhorn Army Ammunition Plant,
Marshall, TX 75670-1059.

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

001182

HSHB-M

SOLID WASTE CONSULTATION NO. 38-26-0498-86
SANITARY LANDFILL CLOSURE PLAN
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS
16-18 SEPTEMBER 1985

1. AUTHORITY. Letter, HQ AMC, AMCSG-S, 1 October 1984, subject: USAEHA Mission Services, FY 85.

2. REFERENCES.

a. Texas Solid Waste Rules, The Bureau of National Affairs, Inc., Washington, DC 20037.

b. Longhorn Army Ammunition Plant Contamination Survey, November 1983, Environmental Protection Systems, Inc., 7215 Pine Forest Road, Pensacola, FL 32506.

c. Report No. 150, June 1979, Installation Assessment of Longhorn Army Ammunition Plant.

d. Letter, USAEHA, HSHB-ES/WP, 8 April 1985, subject: Hazardous Waste Study No. 37-26-0453-85, Investigation of Barium Contamination in Soil at Burning Grounds, Longhorn Army Ammunition Plant, Marshall, Texas, 6-17 February and 17-30 September 1984.

3. PURPOSE. To develop guidelines for a closure plan for the active sanitary landfill at Longhorn Army Ammunition Plant (LHAAP).

4. BACKGROUND.

a. History of LHAAP. The LHAAP is a Government-owned, contractor-operated industrial installation under the command jurisdiction of AMCCOM with the primary mission to load, assemble, and packout pyrotechnic and illuminating/signal ammunition and solid propellant rocket motors. The Longhorn Division of Thiokol Corporation is the current operating contractor. On 19 October 1942, the initial operation of LHAAP began with the first production of TNT flake by Monsanto Chemical Company, the first contract operator of the ammunition plant in the Production Plant 1 area. Production of TNT continued through World War II until 15 August 1945. The plant was maintained as a Government-owned, Government-operated facility on standby status until 1 February 1952. The Universal Match Corporation operated the plant from that time until 31 August 1956. During this period, LHAAP

produced pyrotechnic ammunition in the Plant 2 area. From November 1955 to the present, Thiokol Corporation has been the operator of the Plant 3 area rocket motor facility. Thiokol assumed total installation operation with the departure of Universal Match Corporation in 1956. From 1955 to 1965, the added mission was the production of rocket motors. Subsequently, the pyrotechnic and illuminating ammunition mission was reestablished.

b. Location of LHAAP. The LHAAP occupies 8,493 acres between State Highway 43 at Karnack and the edge of Caddo Lake. The nearest major communities are Marshall, Texas, located approximately 14 miles southwest of the installation, and Shreveport, Louisiana, located approximately 40 miles to the east. The small towns of Karnack and Uncertain lie on the western and northern borders of the installation, respectively (Figure 1).

c. Physiography. The LHAAP lies in an extensive region commonly referred to as the Pineywoods, a deep inland extension of the Gulf Coastal Plain that extends into Louisiana, Arkansas, and Oklahoma. The area is characterized by pine and hardwood forests that cover gently rolling to hilly terrain. The installation is situated on gently sloping land on the southwest shore of Caddo Lake. The LHAAP is located in a region with a moist, subhumid to humid, mild climate. The average annual rainfall is 46 inches. Precipitation is fairly evenly distributed throughout the year, but December through May could be considered the heavier rain season.

d. Hydrogeology.

(1) The uppermost geologic stratum is the Wilcox Group of the Tertiary period. It is approximately 122 meters thick and is underlain by the Midway Geologic unit. Soils on LHAAP are generally fine grained clays, silts, and fine sands, and are from two basic origins. Residual soils, being formed from decomposition of the underlying Wilcox Group, consist of silty or sandy clay occasionally interbedded with sand strata. These soils become intermixed with soft clay shales at depths greater than 3 to 4 meters. Alluvial soils, found predominantly along the bayou flood plains, are fine-grained clays, silts, and sands. These soils are acidic, of low fertility, and generally moderately drained, with the permeability ranging from moderate to very low.

(2) Caddo Lake is a man-made lake into which all surface water and ground-water drainage from LHAAP eventually flows. The aquifers, which are located in silty sands and silty sand/clay mixtures, are generally underlain by clay layers, sand-clay mixtures, and silty sand layers. The overlying clay layers and water-bearing layers are discontinuous in the residual soils. In the alluvial deposits, more permeable soils overlie thicker aquifers which, in turn, are underlain by soils of low permeability.

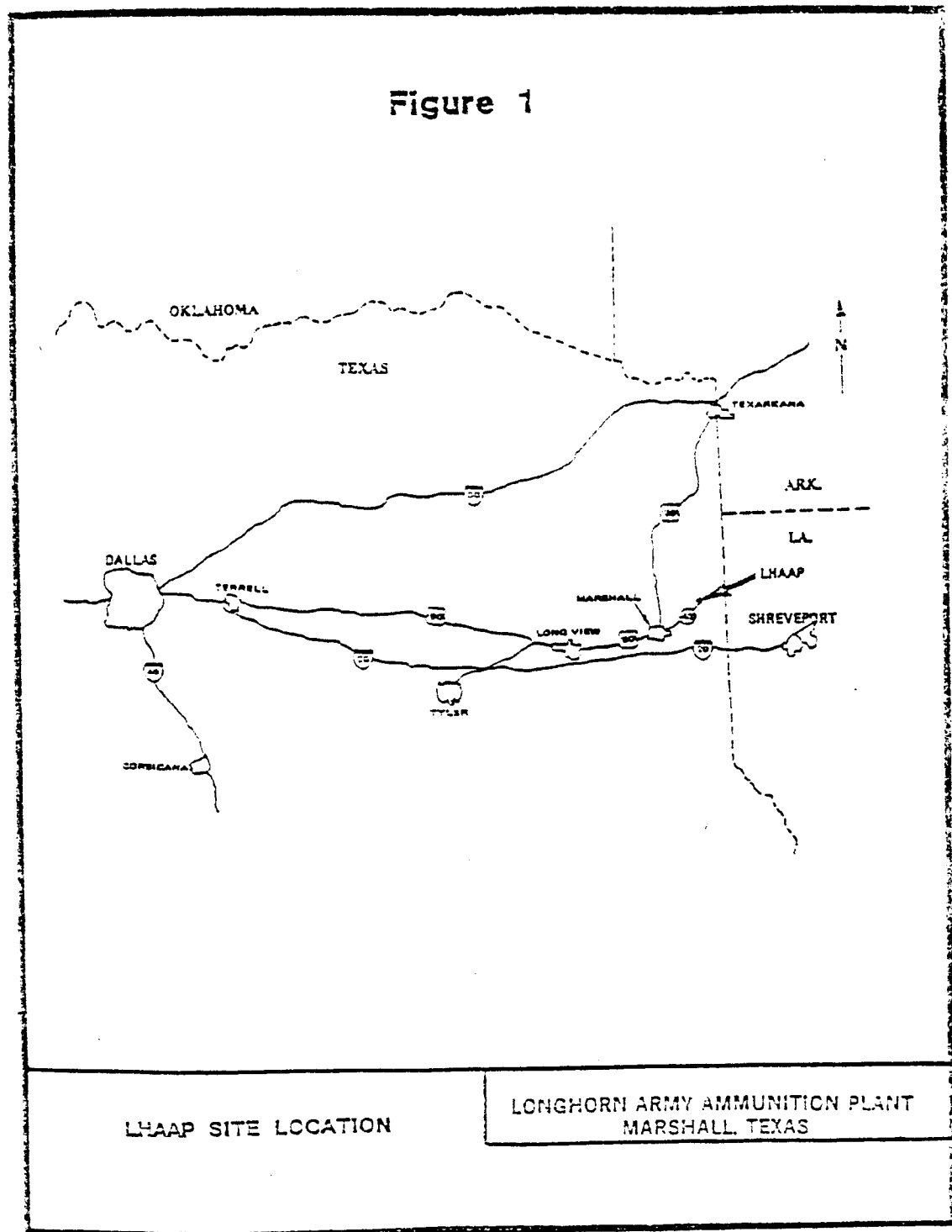
5. GUIDANCE FOR LANDFILL CLOSURE.

a. Landfill Operational Background.

(1) The active sanitary landfill is located off Avenue Q just northeast of the intersection of Avenues Q and P on the site of a former "borrow" area. The Texas State Department of Health has classified the

Ecology Waste Consultation No. 10-11-0488-85, LHAAP, Marshall, TX, 10-13 Dec 85

Figure 1



landfill as a Type IV operation since it serves less than 1,500 people. Putrescible and nonputrescible wastes from administrative, dining, and dispensary areas along with small volumes of relatively inert industrial materials are disposed of in this landfill.

(2) Surface water drainage in the vicinity of the active landfill is to the north or northeast into Central Creek, which flows into Caddo Lake, and there is some potential for off-post contaminant migration from this area (Figure 2).

(3) The regional ground water in the area also flows toward Caddo Lake. The local ground water generally follows the surface contours toward low-lying areas.

(4) In addition to the sanitary landfill, the site includes an asbestos pit and a paper record pit. The paper record pit reportedly has been used for disposal of paper records and a small amount of putrescible wastes. The asbestos pit was used only for disposal of waste asbestos. Both pits should be treated as sanitary landfills and closed along with the active sanitary landfill in accordance with the following landfill closure plan.

b. Landfill Closure. The Texas Solid Waste Rules and Landfill Closure Requirements have been incorporated into the following landfill closure guidelines.

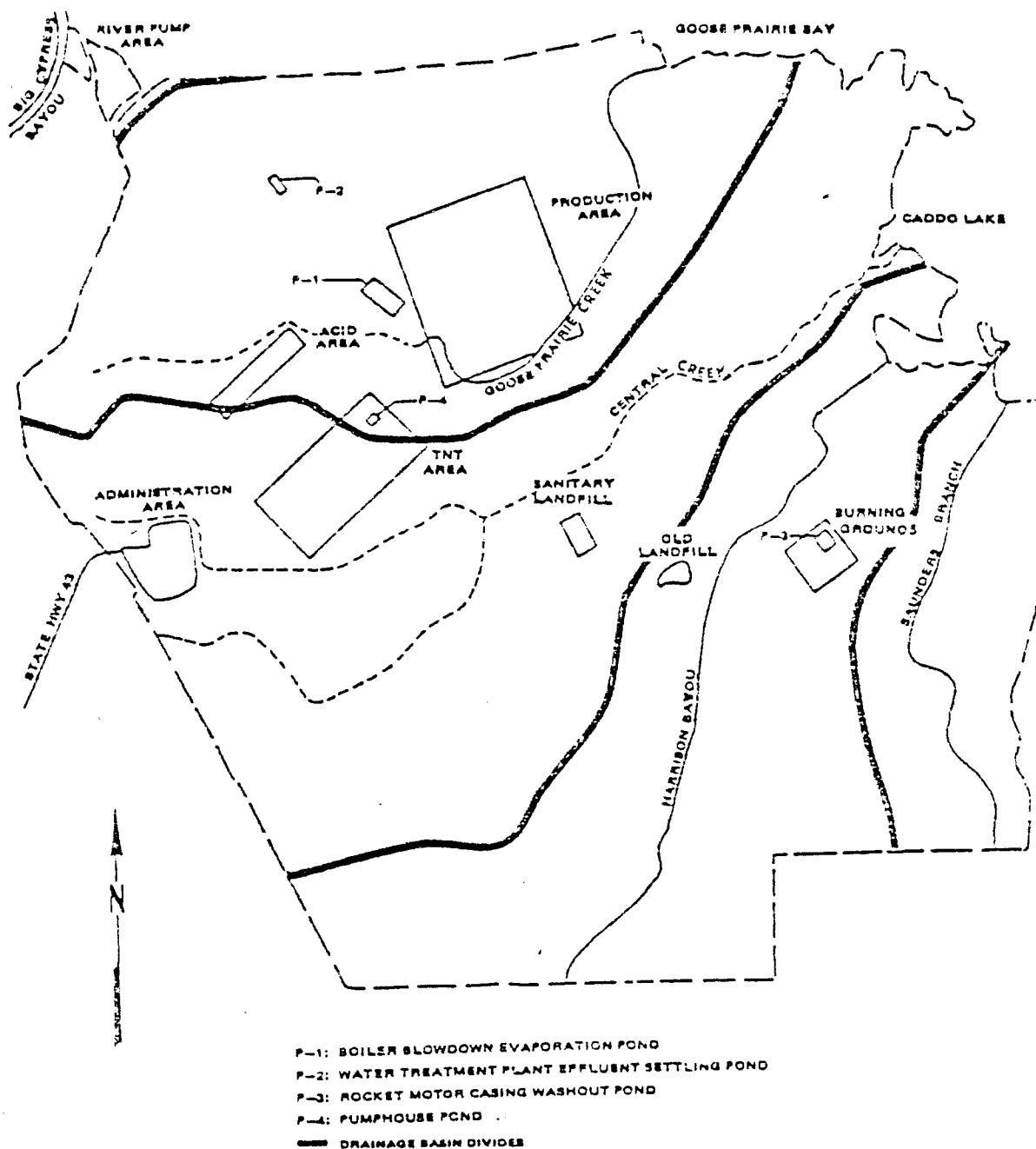
(1) Restrict Landfill Use. When physical closure is initiated, no further refuse should be accepted at the site and any remaining uncovered refuse should be covered. Access should be restricted, the gate at the entrance of the landfill should be secured, and signs should be posted describing the procedure for alternate waste disposal.

(2) Installation of Gas Collection and Venting System. For each row of waste cells, a perforated polyvinyl chloride (PVC) pipe should be placed horizontally over and parallel to the rows of filled waste cells. The pipe should have slots or holes no larger than 1/8 of an inch in width or diameter with a frequency of no less than one hole per inch of pipe length. When installed, the pipe should have a positive slope of 1.5 percent. At each end of the pipe, a PVC upright should be installed as a vent to the surface. The vent should extend high enough above the projected final surface to prevent rodents from entering (about 3 feet). These vents should be installed with a 90-degree elbow pipe at the bend to act as a rain shield (Figure 3). The system should be covered with a uniform coarse sand (average particle diameter of 3 mm, plus or minus 1 mm) to a minimum thickness of 1.5 feet over the top of the horizontal PVC pipe.

(3) Installation of an Impermeable Cap. Obtain enough clayey soil of classification SC or CL (as defined under the Unified Soils Classification System) to cover the entire area with an impermeable cap. This Agency's Soils Laboratory is available to do soil analysis to determine a soil's suitability for use as a cap. Spread the cover and compact it to 95-percent maximum standard Proctor density in 4- to 6-inch layers to a thickness of at least 2 feet. If the cover material is not a natural soil,

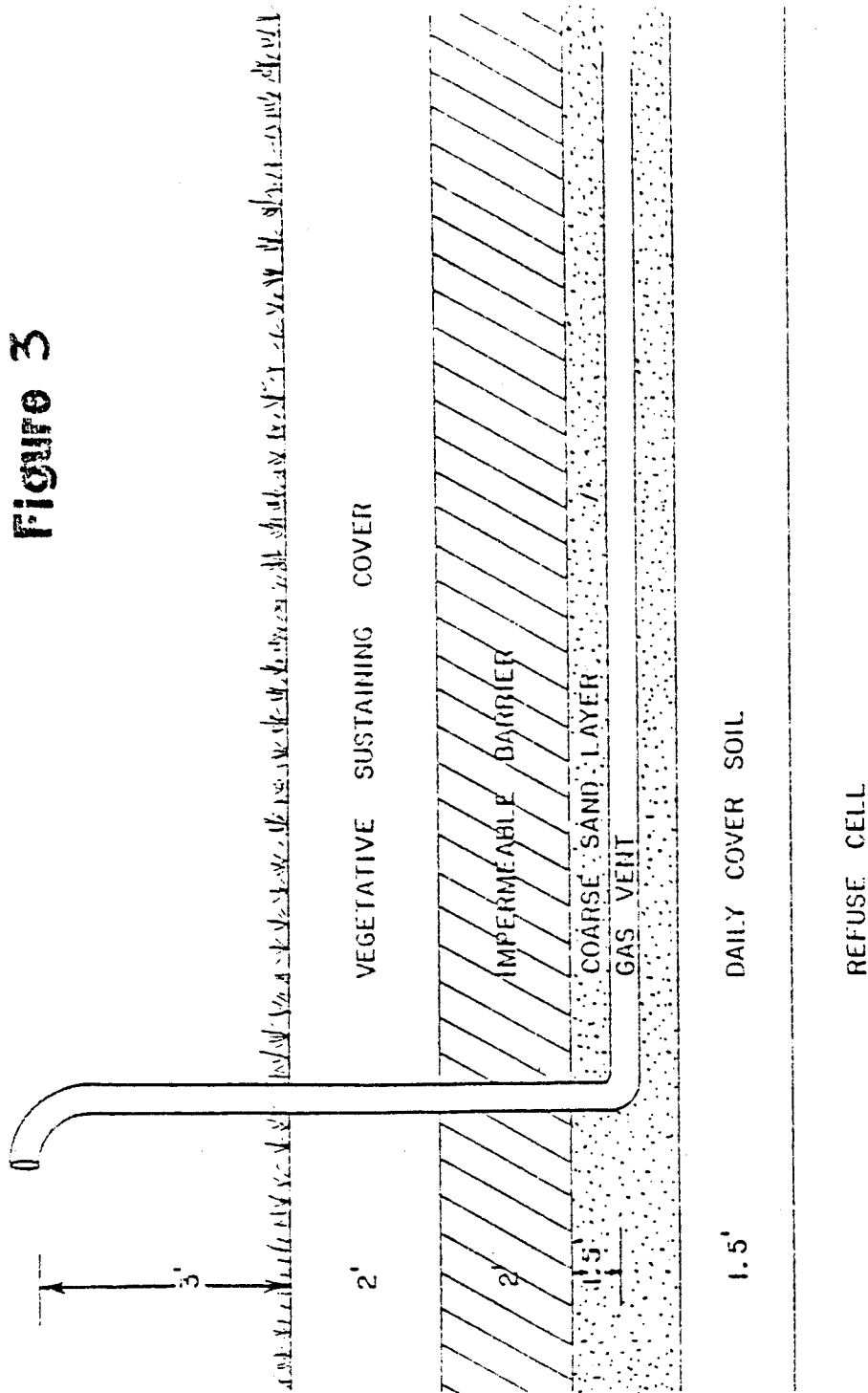
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Figure 2



DRAINAGE BASINS
AND
HOLDING PONDS

LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS



DETAIL OF LANDFILL COVER AND GAS VENTING SYSTEM.

Solid Waste Consultation No. 38-21-0498-86, LHAAP, Marshall, TX, 16-18 Sep 85

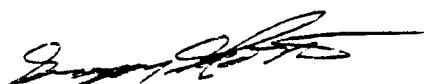
apply it according to the manufacturer's directions. The surface of this cover material must have a positive slope of 3 to 5 percent to prevent ponding of rain water and facilitate rainfall runoff to Central Creek.

(4) Final Soil Cover. Obtain enough soil, capable of sustaining vegetative growth, to uniformly cover the entire fill area to a minimum depth of 2 feet when spread and tamped to a dry density of about 1.2 g/cc. The soil source currently being used for daily cover should be adequate for this application. Without compromising the 1-foot cover, grade the site to produce a positive slope of 3 to 5 percent towards Central Creek. The side slopes of the landfill should not exceed a 25 percent grade, and diversion ditches should be constructed around the site to carry runoff and run-on away from the landfill. The site should be seeded with a suitable shallow-rooted, naturally occurring grass. Erosion during cover establishment can be prevented by mulching with coarse straw.

(5) Ground-water Monitoring. The active landfill has six monitoring wells around it for sampling the near surface aquifer for contamination (Figure 4). At the time of this study, the State of Texas did not require ground-water monitoring at the site. If ground-water monitoring should become a requirement, monitoring should be performed in accordance with Texas State regulations.

(6) Postclosure Maintenance. The site should be inspected annually for erosion or settlement of the cover, and records should be maintained of these inspections. Erosion damage can be corrected by refilling, regrading, and reseeded, while settlement should be corrected by removing the vegetative soil cover, refilling, recompact, and regrading to restore the grade and integrity of the impermeable cap. The vegetative cover should then be reestablished.

6. RECOMMENDATION. To ensure regulatory compliance, develop a detailed closure plan based on the landfill closure guidelines (reference 2a).



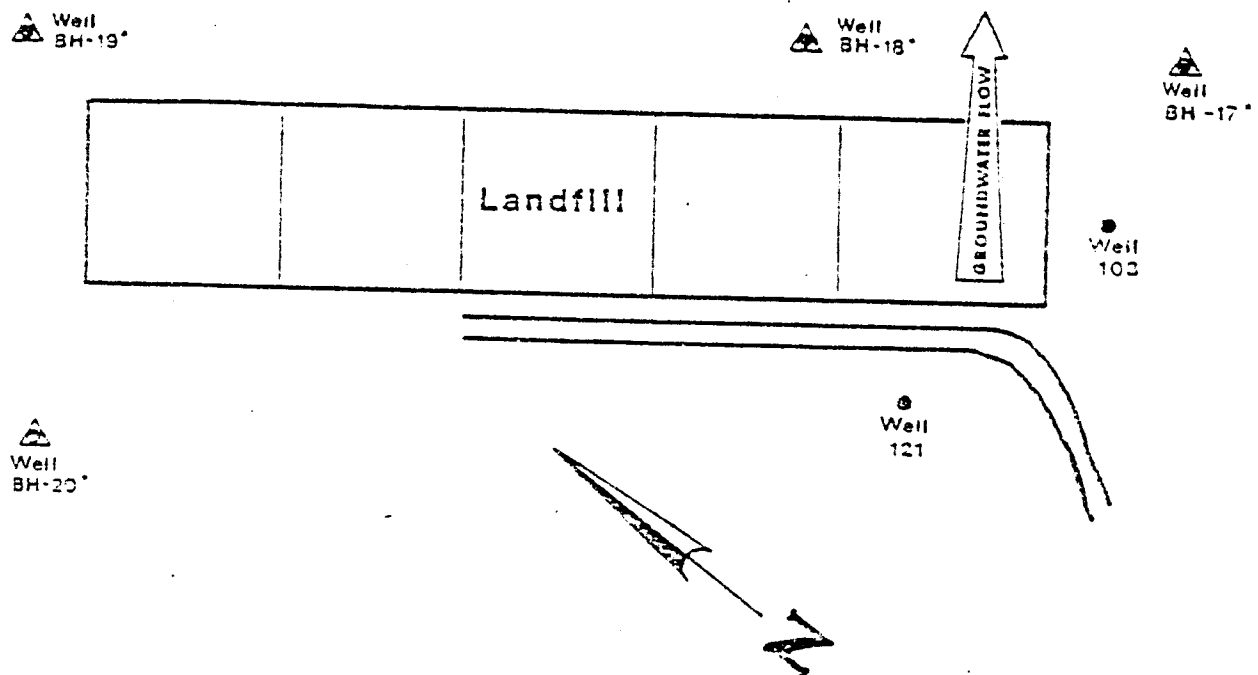
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Figure 4



- ▲ Surface water / Sed Sampling Site
- X Soil Sampling Areas
- Well Installed During Project
- ▲ Existing AEHA Wells * (AEHA No.)
- ▲ Proposed Surface Water / Sed Sampling Sites
- Proposed Well Locations
- X Proposed Soil Sampling

APPROX SCALE 1:4600

Active Landfill

LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS