AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0009	14 MAY 2002		

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
US ARMY ENGINEER DISTRICT, FORT WORTH ATTN: CESWF-CT (RM 2A19) PO BOX 17300 FORT WORTH, TX 76102-0300			

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*	(X)	9A. AMENDMENT OF SOLICIATION NO.
	☒	DACA63-02-R-0011
		9B. DATED *(SEE ITEM 11)* 11 MARCH 2002
	☐	10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 11)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a)By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

The Request for Proposal for Design-Build Tactical Equipment Shop, Fort Hood, Texas, is amended as follows:

See Continuation Sheets.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	16C. DATE SIGNED

Item 14. Continued.

CHANGES TO PROPOSAL RECEIPT DATE

1. Standard Form 1442, First Page, Item No. 13.A.- In the second line, reinstate the Receipt of Proposal date and time to "30 May 2002 at 4 pm local time".

CHANGES TO VOLUME I – PROJECT INFORMATION, BIDDING REQUIREMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT

2. Replace the Price Proposal Schedule, (pages 00010-3 through 00010-5), with the accompanying new Price Proposal Schedule, (pages 00010-3 through 00010-5), bearing the notation "ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. DACA63-02-R-0011."

CHANGES TO VOLUME II – DESIGN AND PERFORMANCE REQUIREMENTS

3. Replace the following chapters with the accompanying new chapters of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. DACA63-02-R-0011:"

CHAPTER C24 - ACCESSORY FIXTURES
CHAPTER D - SERVICES
CHAPTER D32 - HEAT GENERATION
CHAPTER G23 - LANDSCAPING

CHANGES TO VOLUME III – SPECIFICATIONS

4. Add Section 01270A MEASUREMENT AND PAYMENT, bearing the notation “ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. DACA63-02-R-0011,” and add to the Table of Contents.

5. Replacement Sections – Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. DACA63-02-R-0011:"

01000	DESIGN AND CONSTRUCTION SCHEDULE
01500	TEMPORARY CONSTRUCTION FACILITIES
01770	CONTRACT CLOSEOUT

CHANGES TO VOLUME IV – DRAWINGS

6. Replacement Drawings (Volume IV, Attachment A).- Replace the drawings listed below with the attached new drawings(s) of the same number, bearing the notation "AM #0009":

a04.cal	A-4	Performance Standard Criteria
a05.cal	A-5	Performance Standard Criteria
a07.cal	A-7	Features Of Functional Areas
b01.cal	B-1	Floor Plan
b02.cal	B-2	Building Elevations
b03.cal	B-3	Building Elevations

b05.cal B-5 Building Sections
b06.cal B-6 Door Schedule
b07.cal B-7 Roof Plan
m02.cal M-2 Plumbing Details

END OF AMENDMENT

Solicitation No.DACA63-02-R-0011

PRICE PROPOSAL SCHEDULE
(To be attached to SF 1442)

Design-Build Tactical Equipment Shop FY02
Fort Hood, Texas

BASE BID: All work required by the Contract documents for the design and construction of the Ft Hood Tactical Equipment Shop exclusive of work required by Option Bid Items.

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
0001	All work to design and construct the Tactical Equipment Shop, Complete, Including all **(AM#1)** , utilities to the 1524 mm (5-foot) line, and exclusive of all other work listed separately.	Sum	Job	***	$_____
0002	**All work to design and (AM#3)** Construct all Exterior Work outside the building's 1524 mm (5-foot) line (Including utilities to the Fort Hood utility tie-in, earthwork, paving, sidewalk, parking lot paving, curb and gutter, turfing, **(AM#1)** , and all other work not listed separately)	Sum	Job	***	$_____
0003	**(AM#9) Drilled Piers***				
0003A	**457mm (18-In) Drilled Piers**	****	**VLM**	$_____	$********
0003B	**610mm (24-In) Drilled Piers**	****	**VLM**	$_____	$********
0003C	**762mm (30-In) Drilled Piers**	****	**VLM**	$_____	$********
0003D	**914mm (36-In) Drilled Piers**	****	**VLM**	$_____	$********
0003D	**1067mm (42-In) Drilled Piers**	****	**VLM**	$_____	$********
0004	**Mobilization and Demobilization (AM#3)**	**Sum**	**Job**	***	$_____
0005	Final Record Drawings	Sum	Job	***	$ 50,000.00

***See NOTE 10 Foundation Drilled Piers Unit Prices.**

TOTAL BASE BID $_____

Solicitation No.DACA63-02-R-0011

PRICE PROPOSAL SCHEDULE

0006 **The monetary value for warranty work is established at 1 percent of the amount awarded for construction. See the Contract Specifications Section 01770 CONTRACT CLOSEOUT, paragraph "Contractor's Response to Construction Warranty Service Requirements." (AM#9)**

0007 OPTION NO. 1:
Additional cost for all work required by the plans and specifications for using epoxy floor covering in lieu of the hardener/sealant used in the Base Bid. (AM#1)

TOTAL OPTION NO. 1 $_____

0008 OPTION NO. 2:
Additional cost for all work required by the plans and specifications to construct a Truck Loading Dock including Concrete loading dock, Concrete pavement, storm drainage pipe and structures, site grading, and demolition of existing pavement. (AM#2)

TOTAL OPTION NO. 2 $_____

0009 OPTION NO. 3:
Additional or Deductive cost for all work required by the plans, specifications and attachment B – Geotechnical Report to Construct Concrete Hardstand in lieu of Resin Modified Pavement.* (AM#4)

TOTAL OPTION NO. 3 $_____

***Note: Deductive amounts should be denoted by a negative sign (-), parentheses, or brackets. (AM#4)**

TOTAL BID (BASE BID PLUS OPTION NOS. 1, 2 and 3) $_____

0010 Completion Time for all work (not to exceed the maximum time stated in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE).

PROJECT COMPLETION TIME: _____ Calendar Days

Solicitation No.DACA63-02-R-0011

PRICE PROPOSAL SCHEDULE

NOTES:

1. ARITHMETIC DISCREPANCIES (EFARS 14.407-2)

(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 purpose 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, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

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.

3. Bidders must bid on all items.

4. Costs attributable to Division 01 - General Requirements is assumed to be prorated among bid items listed.

5. Responders are advised that this project may be delayed, cancelled or revised at any time during the solicitation, selection, evaluation, negotiation and/or final award process based on decisions related to DOD changes in force structure and disposition of the Armed Forces.

6. EXERCISE OF OPTIONS (SWDR 715-1-1 (16 January 1996))

The Government reserves the right to exercise the option(s) by written notice to the Contractor either singularly or in any combination for up to 90 calendar days after award of the Base Bid without an increase in the Offeror's Bid Price. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE, paragraph 1 entitled SCHEDULE.

Solicitation No.DACA63-02-R-0011

PRICE PROPOSAL SCHEDULE

NOTES: (cont)

7. The Army will procure this facility through a design and cost competition in accordance with the provisions set forth in this Request for Proposals (RFP). When a contract is awarded, it will be a "Firm Fixed Price Contract."

8. The Congress, in authorizing and funding this contract, has established certain cost limitations for the project. The current authorization for the complete design and construction of this project is **$11,000,000.00, (AM#9) exclusive of Option No. 2. (AM#4)** Proposals that exceed this funding limit after exercising any options may be rejected. Submission of desirable alternative features exceeding minimum requirements may be considered as long as award can be made within the established funds.

9. Any proposal that is materially unbalanced as to prices for the Base Schedule may be rejected. An unbalanced proposal is one that is based on prices significantly less than the cost for some work and prices that are significantly overstated for other work and can also exist where only overpricing or underpricing exists.

10. (AM#9) Foundation Drilled Piers Unit Prices: Insert the applicable contract unit price, for each pier diameter, required to drill and construct drilled piers. This information will be used to determine payment, or credit, for any overruns, or underruns, of the minimum depth specified in Attachment B GEOTECHNICAL REPORT. See Section 01270A Measurement And Payment for additional information.

11. (AM#9) ABBREVIATIONS

For the purpose of this solicitation, the units of measure are represented as follows:

a. IN (inches)
b. VLM (vertical linear meters)

END OF PRICE PROPOSAL SCHEDULE

CHAPTER C24

ACCESSORY FIXTURES

PERFORMANCE

A. Basic Function:

1. Provide accessory fixtures as required to accomplish the design as required by code and as indicated in the project program.
   a. Mirrors:
      1) One for each lavatory, unless otherwise indicated.
   b. Waste receptacles.
      1) One for each paper towel dispenser.
   c. Holders and dispensers for toilet and lavatory supplies furnished by Government.
      1) Toilet Paper: Roll, consumer-size; one dispenser per toilet.
      2) Towels: Paper, in rolls; one dispenser per 3 lavatories.
   d. **Deleted (AM#9)**
   e. Visual Display Fixtures: Configuration and surface area as indicated in the program.
      1) Tackable surfaces, which are identified in the program as tackboards, for standard push pin use.
      2) Tackless paper holders.

2. Where accessory fixtures also must function as elements defined within another element group, meet the requirements of both element groups.

3. In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance, Chapter C - Interiors, and Chapter C2 - Interior Fixtures.

B. Health and Safety:

1. Broken Glass Hazard: Provide only fully tempered float glass for glass in fixtures.

PRODUCTS

A. Toilet, Bath, and Laundry Accessories: (10800)

1. Use one of the following:
   a. **Paper Towel Dispenser. Paper Towel Dispenser shall be Fort Hood's base standard; Georgia-Pacific Model #84T, Eclipse Quickview, Lever Control, Roll Tower Dispeser, Color: Smoke, or approved equal.** **(am#1)**

2. Do not use:
   a. Brass accessories.

B. Erasable Surfaces: (10100)

1. Do not use:
   a. Natural slate.
   b. Marker fabric wallcovering.
   c. Painted surfaces.

C. Tackable Material: (10100)

1. Do not use:
   a. Linoleum.
   b. Wood fiberboard.
   c. Gypsum board.

D. Visible Surfaces of Tackable Surfaces:

1. Do not use:
   a. Vinyl wall covering.
   b. Linoleum.

END OF CHAPTER C24

CHAPTER D

SERVICES

PERFORMANCE

A. Basic Function:

1. Provide the following services:
   a. Conveying Systems: Mechanized means of conveying goods, as specified in the project program.
   b. Water and Drainage (D2): Means of delivery of water to points of utilization; automatic heating and conditioning of domestic water; and unattended removal of water, rainwater, and liquid waste.
   c. HVAC (D3): Artificial means of maintaining interior space comfort and air quality, including heating, cooling, ventilation, and energy supply.
   d. Fire Protection (D4): Automatic fire detection, suppression, and warning; automatic smoke control; and manual fire-fighting equipment.
   e. Electrical Power (D5): Energy to operate all electrically-operated devices, including those included under other services and those provided separately by the Government.
   f. Artificial Lighting (D6): Means of illuminating spaces and tasks, both interior and exterior, independent of reliance on natural light.
   g. Telecommunications (D7): Services that include voice and data transmission.
   h. Process Utilities: Services that include air and gases.
   i. Other Services (D9): Services that include lightning protection, special grounding, cathodic protection, and public address/intercom system.

2. Utility Sources and Outlets:
   a. Water Source: Ft. Hood, Water Distribution System.
   b. Sewage Disposal: Connect building sewer to the existing public sewage system.
   c. Rain Water Drainage Outlet: See Chapter G.
   d. Electrical Power Source: Electrical power is obtained from Texas Utilities Company with an electrical distribution sub-station located on post.

3. Equipment That is Not Part of Services Systems: Specified in the project program and in Chapters E, E1, or E11 through E19.

4. Where services elements must also function as elements defined within another element group, meet the requirements of both element groups.
   a. Where services elements are located outside the building in the site area, meet applicable requirements of Chapters G3, G31, G32, G33, G34, and G39.

5. In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance.

B. Amenity and Comfort:

1. Artificial Illumination: Provide illumination for all interior spaces that is adequate in level and quality for comfortable performance of tasks typical for each space, regardless of the availability of natural light.
   a. Light Levels: See Chapter D6.

2. Equipment Producing By-Product Heat: Ventilate housings and cabinets as required by equipment manufacturer and rooms and spaces as required to maintain specified environmental conditions.

3. Moisture: Prevent condensation from forming on service elements.

4. Airborne Sound:

a. Maintain the sound transmission characteristics of assemblies through which services must pass; comply with requirements of chapter where penetrated assembly is specified.
b. Prohibited Plumbing Noises: All sounds of flushing and of liquid running through pipes ("bathroom sounds") are prohibited outside of the rooms housing toilets, bathtubs, and showers, with the exception of when doors to those rooms are open.
c. Equipment Noises: Noise level below that which will be objectionable, based on occupancy of spaces.
d. When services are located within assemblies that perform sound isolation functions, consider the noise produced by the service itself as one of the external sound sources.

5. Structure-Borne Sound and Vibration: Prevent transmission of perceptible sound and vibration from services equipment that rotates, vibrates, or generates sound, by isolating such equipment from superstructure or by isolating equipment support foundations from building foundations.

6. Cleanliness: Prevent accumulation of debris and dirt at floor mounted equipment, such as air handlers, chillers, pumps, switchgear, and panelboards by one or more of the following methods.
a. Provide 100 mm (4 inch) thick, concrete housekeeping pads.

7. Odors: Eliminate, isolate, or exhaust odors produced by occupant functions and building services.

8. Appearance:
a. Conceal services elements from view to greatest extent possible, with exposed portions of simple, neutral design and color.
1) Exception: Standard designs of manufacturers, without consideration for appearance, may be used for fire suppression sprinkler heads.
2) Exception: Exposed portions are acceptable in SU1, SU2, SV1, and SV3 areas.
3) Where exposed portions are acceptable, do not obstruct or diminish clear dimensions of doorways, windows, other operable openings, access panels and cabinet doors, or passageways, stairs, and other exitways.
4) Where exposed piping is acceptable, install it close to walls and overhead structure, parallel and square to finished construction, plumb and nominally horizontal (except where required to slope for drainage).
b. Cover annular spaces around pipes, ducts, and conduits, where they pass through walls, ceilings and floors, in visually exposed locations, with escutcheons or cover plates.
1) Exception: Escutcheons not required in SU1, SU2, SV1, and SV3 areas, provided annular spaces are filled completely.
c. Mountings: On finished surfaces, use concealed attachments with cover plates, frames, or trim overlapping finishes.

C. Health and Safety:

1. Fire Safety:
a. Maintain fire resistance of walls, floors, ceilings, and other fire-rated assemblies that services must pass through, in accordance with requirements of the chapter in which the fire-rated assembly is specified.
b. Provide fire-rated separations between equipment rooms and other spaces where required, and as specified by, the code.
c. Combustible pipes may be used only where buried if outside building.
d. Substantiation for Combustible Materials, Where Allowed: UL listed or labeled, with flame spread and smoke developed ratings printed on product.
e. Provide products which are fire rated for the specific locations where they are installed.

2. Safety Hazards: Avoid safety hazards whereverpossible; where services must involve flammable materials or hazardous operations, comply with code.

3. Excess Pressure: Design pressurized components to withstand operational pressures without

failure and to relieve or reduce excessive pressure to prevent failure.

4. Misuse: Minimize misuse that could result in damage to property, injury, or loss of life.

5. Hazardous Contents:
   a. Flammable liquid storage locations are in the POL storage.

6. Electric Shock: Provide equipment which protects personnel from electrical shock.

7. Toxic Materials:
   a. Lead: Do not use lead or lead-containing materials in potable water systems.
   b. Lead: In solid materials (including pipe), maximum lead content of 8 percent; in solders and flux, maximum lead content of 0.2 percent.

8. Vermin Resistance: Use components that are resistant to the entry of rodents and insects.

9. Flooding: See Chapter 111 for flood zone applicability.

D. Structure:

1. Supports for Piping, Conduit, Ducts, and Components: Attached to, and supported by, the superstructure, not to or by non-structural construction or sheet metal elements, so that they do not move or sag, using the following:
   a. Supports that allow movement of the rigid linear elements (pipe, etc.) without undue stress on the piping, tubes, fittings, components, or the superstructure.
   b. Intermediate supports mounted between structural members to limit distance between supports.
   c. Supports capable of handling seismic forces in accordance with the code.
   d. Mounting frames, bases, or pads, designed for ease of anchorage or mounting.
   e. Rigid sway bracing at changes in direction of more than one-half of a right-angle, for all pipes.
   f. Substantiation:
      1) Design Development: Details of supports, including engineering analysis.

2. Structural Design of Components and Their Supports: In accordance with code.
   a. Safety Factor for Component Structural Elements: Two; based on mass (weight) of component.
   b. Anchors: Securely and positively attach all services components to superstructure.

3. Concealed or Buried Components: Design cover or concealment so that components are not subjected to damaging stresses due to applied loads.

E. Durability:

1. Expected Service Life Span: Same as the service life of the building, except as follows:
   a. Ducts, Piping, and Wiring in All Services: Same as the service life of the building.
   b. All Components Permanently Installed Underground or Encased in Concrete: Same as service life of building.
   c. Conveying Systems: Minimum 50 years.
   d. Plumbing:
      1) Shut-Off Valves and Similar Components: Same as service life of building.
      2) Electrically- and Fuel-Operated Equipment: Minimum 20 years.
      3) Other Moving Components: Minimum 20 years.
      4) Plumbing Fixtures: Same as building service life.
      5) Sink Faucets, But Not Other Fittings: Minimum 10 years.
   e. HVAC:
      1) Shut-Off Valves: Minimum 10 years.
      2) Dampers, Louvers, Registers, Grilles: Same as service life of building.
      3) Main Heat Generation and Cooling Equipment: Minimum 20 years.

4) Secondary Equipment: Minimum 10 years.
5) Control Components, Except Wiring: Minimum 10 years.

f. Fire Protection:
1) Sprinkler Heads, Valves, and Other Inlet and Outlet Components: Same as building service life.
2) Pumps and Other Operating Components: Minimum 20 years.
3) Fire Hoses: Minimum 20 years.

g. Electrical:
1) Power Distribution Equipment: Same as building service life.
2) All Components of Life Safety-Related Systems: Minimum 20 years.
3) Control Components, Except Wiring: Minimum 10 years.

h. Lighting Fixtures: Minimum 15 years.
i. Telecommunications Systems: Minimum 10 years.
j. Integrated Facility Controls: Minimum 15 years.
k. Security Controls: Minimum 15 years.
l. Lightning Protection and Special Grounding Systems: Same as building service life.
m. Software and Firmware Integral to Operation of Services Equipment: Minimum 20 years functional life without reprogrammingrequired and, specifically, unaffected by millennium date change (Y2K).

2. Weather Resistance:
a. All components exposed to outdoor environmentmust comply with the requirements of Chapter B and Chapter B2; equipment enclosures are considered the equivalent of the exterior enclosure.
b. Liquid Storage and Distribution Components: Prevent freezing during longest duration of low temperature anticipated, based on historical weather data; if necessary, provide automatically controlled supplemental heating.
c. Buried Water Piping: Minimum of 15 mm (6 inches) below lowest recorded level at which the ground freezes.
d. Services Passing From Inside to Outside: Openings through shell sealed as required to meet performancespecified, and using materials specified, in Chapter B, Chapter B2.

3. Condensation: Provide insulated drain pans and piping to remove condensation from cooling coils.

4. Moisture Resistance: Where components are mounted to surfaces that are required to be moisture-resistant, seal mounting surface of components to finish surface so that moisture cannot penetrate under or behind component, using material that is not affected by presence of water, that is mildew-growthresistant, and that has a minimum service life of 10 years.

5. Temperatureand Humidity Endurance: Design equipment to endure temperature and humidity that will be encountered and to resist damage due to thermal expansion and contraction.

6. Corrosion Resistance: Prevent corrosion by using corrosion-resistant materials, by preventing galvanic action, by preventing contact between metals and concrete and masonry, and by preventing condensation on metals.
a. Metals Considered Corrosion-Resistant: Aluminum, stainless steel, brass, bronze, cast iron, ductile iron, malleable iron, hot-dipped galvanized steel, chrome-plated steel, cadmium-plated steel, and steel coated with high-build epoxy or coal tar-based paint.
b. Piping Connections for Piping of Dissimilar Metals: Dielectric adapters.
c. UndergroundElements: Provide supplementary protection for undergroundmetal pipes, ducts, and conduits, sufficient to prevent corrosion completely, for the service life of the element without maintenance.
1) 150 mm (6 inches) of concrete cover is considered to be permanent protection.
2) Bituminous or other waterproofcoating or wrapping is considered permanent protection unless cathodic protection is required and unless undergroundelement is subject to

movement due to structural loads or thermal expansion or contraction.

3) Provide cathodic protection if any of the following is true; coatings or wrappings will not be considered sufficient protection for elements falling under these criteria:
   a) Metal elements are submerged or buried in a soil environment known to cause corrosion on similar nearby structures.
   b) Metal elements are submerged and buried in a soil environment in which stray DC electrical currents are present.
   c) Metal piping carrying petroleum products or other hazardous or toxic materials is buried or otherwise installed without means of visual observation of entire exterior surface of piping.
   d) Metal tank holding petroleum products or other hazardous or toxic materials is buried or otherwise installed without means of visual observation of entire exterior surface of tank.

7. Accidental Water Leakage: Locate components that would be damaged by water leakage from pipes or through foundations or roof out of likely paths of water and at least 100 mm (4 inches) above floor level.

8. Abuse Resistance:
   a. Buried Components: Minimum of 300 mm (12 inches) below surface of ground.
   b. Underground Piping and Conduit: Watertight and rootproof.
   c. Finishes on Exposed Components Subject to Touching by Occupants: Durable enough to withstand regular scrubbing using ordinary methods.
   d. Provide equipment which has been designed to prevent tampering.

9. Accidental Damage: Protect equipment and piping from accidental damage.

10. Underground Piping Accidental Damage: Protect heating piping and chilled water piping from accidental damage with a warning tape buried 300 mm (12 inches) above the pipe.

F. Operation and Maintenance:

1. Capacity:
   a. Conveying Systems: As specified in the project program.
   b. Water and Drainage: As required by code and as specified in Chapter D2.
   c. Heating, Cooling, and Ventilating: Maintain interior environment within ranges specified in Chapter 111.
   d. Fire Suppression: As required by code and as specified in Chapter D4.
   e. Electrical: As required by code and as specified in Chapter D5.
   f. Telecommunications: As specified in Chapter D7.

2. Efficiency:
   a. Energy efficiency as specified in Chapter 111.
   b. Water consumption as specified in Chapter 111.

3. Ease of Use:
   a. Provide software which is year 2000 compliant.
   b. Access: All mechanical and electrical equipment located to allow easy access. Provide access doors for equipment accessed through walls, partitions, or fixed ceilings.
   c. Valves and Other Control Devices: Accessible handles, switches, control buttons; valve handles on top/upper side; chain or other remote operators where located out of normal reach above floor level in SU1 and SU2 spaces.
   d. Space Around Components: Working clearances and access routes as required by code and as recommended by component manufacturer.
   e. Testing: After completion of installation, prepare services for starting-up by testing appropriately for proper operation.
   f. Commissioning: Prepare services for use by eliminating operational anomalies, adjusting

control systems for optimum operation, and demonstrating proper functioning, as specified in Chapter 00830.

g. Preparation for Operation: Provide assistance for the Government's preparations for operation, as specified in Chapter 00830 and as follows:
   1) Demonstration of all services to Government personnel.
   2) Training Government personnel in the operation of all service systems.

4. Ease of Cleaning: Where not otherwise specified, design equipment mountings to allow easy cleaning around, and under, equipment, if applicable, without crevices, cracks, and concealed spaces where dirt and grease can accumulate and with raised, closed bases for equipment mounted on the floor.
   a. Provide equipment with removable access panels to allow cleaning.

5. Ease of Maintenance and Repair:
   a. Piping Other Than Gravity Drains: Provide means of isolating convenient portions of piping system, so that small portions may be shut down leaving the remainder in operation and so that drainage of the entire system is not required to enable repair of a portion of it.
   b. Piping: Entire systems drainable without disassembly of piping.
   c. Above Ground Piping: Labeled to identify contents and direction of flow, each shut-off valve, each piece of equipment, each branch take off, and at 6 m (20 ft) maximum spacing on exposed straight pipe runs.
   d. Equipment in Piping Systems: Each unit provided with a union or flanged connector at each pipe connection to allow easy removal.

6. Ease of Equipment Service: As specified in Chapter 111 and the following:
   a. Lighting: Adequate for locating and operating equipment; emergency lighting for critical components.
   b. Do not locate any equipment requiring maintenance on the roof, in attics, in crawl spaces, where access must be through attics or crawl spaces, or where access is not possible using removable panels or doors.
   c. Parts Having Service Life Less Than That Specified for Element: Easily replaceable, without de-installation or de-mounting of the entire element, component, or equipment item.
   d. Valves: Easily replaceable internal parts, eliminating necessity of removal of entire valve for repair.
   e. Parts: Readily available from stocking distributors within 80 km (50 miles) of project location.

7. Maintenance Service: Maintain services as specified in Chapter 00830, including periodic inspections, routine maintenance recommended by manufacturers, and repair and replacement of defective elements; maintenance is required only for systems so specified.

8. Ease of Equipment Removal: Provide doors and corridors large enough for removal of major pieces of equipment, such as, chillers, and boilers.

PRODUCTS

A. Do not use:

1. CFC-based refrigerants.

2. **Halon. (AM#9)**

METHODS OF CONSTRUCTION

A. The following existing services elements must be removed to accomplish new construction:

1. Existing asbestos and asbestos-containing insulation on pipes, ducts, and equipment.

END OF CHAPTER D

CHAPTER D32

HEAT GENERATION

PERFORMANCE

A. Basic Function:

1. Provide the necessary equipment and infrastructure to deliver heat to the conditioned spaces.
2. Where HVAC elements also must function as elements defined within another element group, meet the requirements of both element groups.
3. In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility and Performance, Chapter D - Services, and Chapter D3 - HVAC.

B. Health and Safety:

1. Hazards: Provide boilers and furnaces which safeguard people, property and equipment from the following potential hazards:
   a. Exposure to open flames.
   b. Exposure to hot surfaces.
   c. Exposure to carbon monoxide.

C. Durability:

1. TemperatureEndurance: Provide equipment designed for ambient temperatures ranging from minus 15 deg C to 50 deg C (5 deg F to 122.
2. Chimneys and Flues: Provide flues designed for flue gas temperature of 204 degrees C (400 degrees F).
3. **Not Used (am#1)**

D. Operation and Maintenance:

1. Ease of Use: Design access to and working clearances around heating equipment as recommendedby the manufacturer.

PRODUCTS

A. **Not Used (am#1)**

B. Furnaces:

1. Use the following:
   a. **Horizontal or vertical gas-fired furnaces. (AM#9)**

C. Flues:

1. Use one or more of the following:
   a. Double-walled;aluminum inner and galvanized outer Type B gas vents.
   b. Double-walled; stainless steel inner and aluminum coated steel outer duct.
   c. Double-walled;stainless steel inner and aluminum coated steel outer duct with 1 inch (2.5 cm) thick insulation between inner and outer walls.

END OF CHAPTER D32

CHAPTER G23

LANDSCAPING

PERFORMANCE

A. Basic Function:

1. Provide turfing over all areas of the site not finished with paving, surfacing, or buildings.
2. **Deleted (AM#9)**
3. Where landscaping elements also must function as elements defined within another element group, meet the requirements of both element groups.
4. In addition to the requirements of this chapter, comply with all applicable requirements of Chapter 111 - Facility Performance, Chapter G - Sitework, and Chapter G2 - Site Improvements.

PRODUCTS

A. Turf:

1. Use one of the following:
   a. Common Bermudagrass.

METHODS OF CONSTRUCTION

A. Turf:

1. Use one of the following methods of installation:
   a. Sodding shall be used in areas normally prone to wash out or erosion
   b. Seeding - All disturbed areas not covered by structures, pavement, or impervious surfaces shall be covered by seeding or sodding.

END OF CHAPTER G23

SECTION 01000

DESIGN AND CONSTRUCTION SCHEDULE
AM NOS. 0004 AND 0009

PART 1 GENERAL

1.1 SCHEDULE

Commence, prosecute, and complete the work under this contract in accordance with the following schedule and Section 00700 CONTRACT CLAUSES clauses COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK and LIQUIDATED DAMAGES:

Item of Work	Commencement of Work (calendar days)	Completion of Work (calendar days)[1] **(AM#4)**	Liquidated Damages per calendar day____ __
(1) Completion of all design and construction work except Establishment of Turf, Truck Loading Dock and associated paving and sitework	Within 10 calendar days after receipt of Notice of Proceed	500	$1400.00
(Am#3) **(2) Design and construction of Truck Loading Dock and associated paving and sitework**	**Within 10 calendar days after receipt of Notice of Proceed**	**90**	**$ 500.00**
(3) Establishment of Turf	*	*	---

[1]NOTES:
a. The Contract duration stated above for Work Item 1 is the maximum

duration **(AM#4)** **for the project**. Upon Contract Award, the Contractor's proposed duration as stated on the Price Proposal Schedule shall become the contract duration for this Work Item. The liquidated damages stated above will be applied for each calendar day the Contractor exceeds the Contract duration schedule.

b. See Section 01015 DESIGN REQUIREMENTS AFTER AWARD, paragraph "SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSES," concerning submission of construction documents and Section 01000 paragraph, "SEQUENCE OF DESIGN/CONSTRUCTION," concerning start of construction.

c. For construction planning purposes Government review time for review submittals is specified in 01015 DESIGN REQUIREMENTS AFTER AWARD.

d. Delay in completion of design will not be considered as a valid reason to delay completion of entire work.

*Establishment of Turf

Planting and maintenance for turfing shall be in accordance with Contractor's Section for TURFING. No payment will be made for establishment of turf until all requirements of the section are adequately performed and accepted, as determined by the Contracting Officer.

1.1.1 Testing of Heating and Air-Conditioning Systems

The times stated for completion of this project includes all required testing specified in appropriate specification sections of heating, air conditioning and ventilation systems including HVAC Commissioning. Exception: boiler combustion efficiency test, boiler full load tests, cooling tower performance tests, and refrigeration equipment full load tests, when specified in the applicable specifications, shall be preformed in the appropriate heating/cooling season as determined by the Contracting Officer.

1.2 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) (ER 415-1-15)(52.0001-4038 1/96)

a. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

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

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

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

weather delays in all weather dependent activities. Wind is not considered in the Monthly Anticipated Adverse Weather Calendar Day Schedule.

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

KILLEEN, TX AREA (FORT HOOD, BELTON AND STILLHOUSE LAKES AND RESERVE CTRS. ALONG HWY 36 FROM HWY 79 TO HWY US67)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4	4	4	4	6	4	3	3	4	4	3	4

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

The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph "b", above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)."

1.3 WORK RESTRICTIONS

1.3.1 Working Hours

Normal duty working hours shall be Monday through Friday, 0700 to 1700 hours.

1.3.2 Security Requirements

(AM#4) For the duration of this Contract, access to Fort Hood will be delayed between 5 minutes to 30 minutes or more due to increased security precautions, including the checking of vehicle occupants' IDs, vehicle manifests, and the searching of all vehicles. Any general or specific threat to the safety of those working or living at Fort Hood could result in longer waiting times at the access points to Fort Hood.

The following are requirements for contractor employees entering Fort Hood:

a. One form of picture ID.

b. A memo from the construction company on their letterhead stating the reason for entry, contract number, and the location at Fort Hood where the jobsite is located.

c. All delivery trucks must have a bill of laden and delivery truck drivers must have a picture ID.

d. Employee Identification Badges: Contractor personnel shall wear visible Contractor-furnished employee identification badges while physically on the Installation. Each badge shall include, as a minimum, the company name, employee name, photograph, Contract Title, Contract Number, and the expiration date of the badge. See Section 01500

TEMPORARY CONSTRUCTION FACILITIES for additional requirements.

1.4 UTILITIES

1.4.1 Payment for Utility Services (FAR 36.303(C)(6))

Water, gas, and electricity are available from Government-owned and operated systems and will be charged to the Contractor at rates as provided in Contract Clause 52.236.14 AVAILABILITY AND USE OF UTILITY SERVICES.

(Am#3) 1.4.1.1 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections, distribution lines, and meter bases required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before utility (gas, water, electricity) connections are desired so that a utilities contract can be established.

(Am#3) 1.4.1.2 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

1.4.2 Outages

The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing 14 days prior to date of requested outage:

a. Water, **(Am#3)** and sewer outages shall be held to a maximum duration of 4 hours unless otherwise approved in writing.

b. **All utility outages shall be scheduled only on Saturdays, Sundays, or holidays unless specific approval is otherwise received. (Am#3)**

c. **Gas or Electrical outages are prohibited. Connections to gas and electric lines shall be connected hot without an outage. (Am#3)**

1.5 STREET CLOSINGS

The Contractor shall coordinate all requests for street closings with the Contracting Officer in writing 14 days prior to date of requested outage:

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.

c. Open cuts across paved roads and streets for utility crossings will not be allowed. Utility crossings will be accomplished by boring or jacking procedures unless otherwise indicated. (Am#3)

(AM3#)

1.6 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DFAR 252.236-7004)(DEC 1991)

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract lump sum price for this Item.
(1) 60 percent of the lump sum price upon completion of the Contractor's mobilization at the work site.
(2) The remaining 40 percent upon completion of demobilization.
(b) The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a)(1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.
(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of-
(i) Actual mobilization costs at completion of mobilization;
(ii) Actual demobilization costs at completion of demobilization; and
(iii) The remainder of this item in the final payment under this contract.
(2) The Contracting Officer's determination of the actual costs in paragraph (b)(1)of this clause is not subject to appeal.

1.7 SEQUENCE OF DESIGN/CONSTRUCTION

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, with the exception of clearing, etc, until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

Exception: The foregoing provisions apply to all facets of work in this Contract, except for the Truck Loading Dock and associated paving and sitework (Work Item 2). For these items, all drawings and specifications, including layout, grading, drainage, paving details, storm drain details, and loading dock structural details, as well as concrete, culvert, and reinforcing steel submittals, shall be provided for Government review within 15 days of receipt of NTP. The Government undertakes to review and return these submittals within 10 days of receipt. The completed truck Loading Dock and associated paving and sitework shall be available for Government use within 90 days of receipt of NTP. [AM#0009]

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submitttals have been made, reviewed and are satisfactory to the Government.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION 01270A

MEASUREMENT AND PAYMENT
02/94
AMENDMENT NO. 0009

PART 1 GENERAL

1.1 LUMP SUM PAYMENT ITEMS

Payment items for the work of this Contract for which contract lump sum payments will be made are listed in the PRICE PROPOSAL SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.2 UNIT PRICE PAYMENT ITEMS

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

1.2.1 Drilled Piers (or Caissons)

1.2.1.1 Drilled Piers

No separate payment will be made for drilled foundation piers or caissons and payment shall be included in the contract lump sum payment item for design and construction of the building. Drilled foundation piers will be measured by the linear meter for depths actually drilled in strict conformance to the requirements of the Contract and the Construction specifications and drawings. The length of drilled piers will be measured from the authorized bottom of the shafts to their upper termination at the bottom of the grade beam, slab, pier cap, or any formed portion of the pier above grade, as applicable. Payment or credit for overruns or underruns of the minimum depth specified in Attachment B GEOTECHNICAL REPORT will be made at the applicable contract unit price per linear meter according to diameter. This payment or credit shall constitute full compensation for all plant, labor, materials, and all costs necessary for drilling, temporary casing, and furnishing and placing steel and concrete, complete.

1.2.2 Drilled Pier Records

Detailed records in an approved form, for each pier, showing shaft diameters, depths of test holes, top and bottom elevations, minimum

specified depth, overrun or underrun depth, bearing strata description, casing description, water conditions, concrete strength, concrete volume, rock elevations, dates of excavation and concrete placement, and other pertinent information. Upon completion of pier work, the Contractor shall provide a record of centerline locations based on the survey of the registered surveyor or engineer provided by the Contractor. In addition, corrective measures shall be similarly recorded. A complete tabulation of all records pertaining to piers shall be delivered to the Contracting Officer.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES
[AM#0009]

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

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

1.2 SANITATION

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.3 TELEPHONE

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

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction

period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.4.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed.

1.4.2 Barricades

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

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Storage Area

The Contractor shall construct a temporary 1.8 m high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall

not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.5.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.5.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.5.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.6 Not Used

1.5.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.6 NOT USED

1.7 PLANT COMMUNICATION

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

1.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing around the construction site. [AM#0009] The safety fencing shall be a 9 ga. chain link fencing, a minimum of 1.8 m high, supported and tightly secured to steel posts located on maximum 3 m centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 TEMPORARY HAZARD SAFETY FENCING

The Contractor shall furnish and erect safety fencing at temporary hazards and work site areas considered to be hazardous to the public. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 1.1 m high, supported and tightly secured to steel posts located on maximum 3 m centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the hazard and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.10 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.11 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

1.12 MOWING

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.

1.12.1 Mowing

Vegetation shall be mowed when it reaches a height of 100 mm (6 inches). Mowing shall be to a height of 50 mm (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 1 meter of trees or shrubs. Areas adjacent to trees and shrubs shall be mowed with

hand-propelled mowers.

1.12.2 Areas Not Mowed

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 150 mm (6 inches).

1.12.3 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.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION 01770

CONTRACT CLOSEOUT
[AM #0009]

PART 1 GENERAL

1.1 REFERENCES

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

MILITARY SPECIFICATIONS (MIL)

MIL-M-9868E	Microfilming of Engineering Data, 35mm, Requirements For

TRI-SERVICE CADD/GIS TECHNOLOGY CENTER (TSC)

TSC-01	A/E/C CADD Standard Manual (Current Release as of Contract Award date)

U.S. ARMY CORPS OF ENGINEERS (COE)

COE-02	ARCHITECTURAL AND ENGINEERING INSTRUCTIONS MANUAL (SWD-AEIM), Southwestern Division (Current issue as of Contract Award date)

1.2 PAYMENT

Contract closeout activities such as, but not limited to, operation and maintenance manuals, record drawings, warranty requirements, equipment warranty identification tags, and inventories, real property maintenance records, payrolls, and shop drawing submittals, are subsidiary activities of the contract work; separate payment will not be made for any activity unless otherwise specified. Final contract payment will not be made until completion and approval of all contract closeout activities.

1.3 HVAC TESTING

The HVAC Testing that the Contractor schedules after substantial completion pursuant to paragraph entitled "Testing of Heating and Air-Conditioning Systems" of Section 01000 CONSTRUCTION SCHEDULE has a value to the Government of 10 percent of the value of the equipment to be tested. The Contractor shall reserve that amount to be paid on any equipment that will require testing after substantial completion pursuant to the above referenced specification paragraph.

1.4 OPERATION AND MAINTENANCE MANUALS

The Contractor shall be responsible for the preparation, coordination, execution and submittal of all operation and maintenance manuals (O & M Manuals), including spare parts lists, special tools, inventories of equipment manuals and maintenance instructions, and shall conduct all training for operating and service personnel. Operation and maintenance

manuals shall cover all system installations provided in this contract and shall be in sufficient detail to facilitate normal maintenance and troubleshooting by persons with minimum experience with the installed equipment.

1.4.1 Submittal Requirements

All of the above listed items required in the technical specifications shall be submitted to the Contracting Officer not less than 90 days prior to the scheduled contract completion date. Fully developed and approved operation and maintenance manuals shall be provided 30 days prior to scheduling training for operating and service personnel. The Contractor shall coordinate the content of each instruction period required in the technical specifications with the Contracting Officer's Representative prior to the actual start of the training period.

1.4.1.1 Video taping of Training for Operating and Service Personnel

Each instruction or training period as discussed above, shall be video taped in VHS FORMAT by the Contractor. The taping shall include the entire session(s). The original video tape(s) shall be labeled and turned over to the Contracting Officer. The video camera and tapes utilized by the Contractor, shall be of a quality to enable clear and understandable playbacks of the recorded events.

1.4.1.2 Draft O & M Manuals

On those systems where complete and comprehensive operation and maintenance manuals cannot be fully developed until the system(s) is checked, tested, and/or balanced, and the checking, testing, and/or balancing has not been done when submittals are required, a proposed draft of those system manual(s) shall be submitted. 10 percent of the each subsequent scheduled progress payment will be retained until the complete O & M Manuals submittal package have been submitted and approved. Submit fully developed O & M Manuals of the drafts for approval after the systems have been checked, tested, and/or balanced.

1.4.1.3 Commencement of Warranty of Construction

Failure to submit all specified O & M manuals, spare parts listings, spare parts, special tools, inventories of installed property, and training video tapes in a timely manner will be considered as delaying substantial completion of the work. Commencement of warranty under the Contract Clause WARRANTY OF CONSTRUCTION will not occur until all these items are delivered and approved by the Contracting Officer, but not earlier than the date of final acceptance of the work by the Government. When the O & M Manuals with drafts are approved they will not constitute a reason for delaying the start of the warranty period.

1.4.2 Government Possession of Work

The Government may take possession of any completed or partially completed work as provided for under Contract Clause entitled "USE AND POSSESSION PRIOR TO COMPLETION." If the installed equipment and/or systems thereto, have not been accepted by the Government due to the Contractor's failure to submit the above specified items, the Contractor shall operate and maintain such plant or system at no additional cost to the Government until such time that the specified items have been received, approved and any subsequent testing, check-out and/or training has been completed.

1.5 PREPARATION AND SUBMISSION OF OPERATION AND MAINTENANCE MANUALS

This paragraph establishes general requirements for the preparation and submission of equipment operating, maintenance, and repair manuals as called for in the various sections of the specifications. Specific instruction(s) relating to a particular system or piece of equipment shall be incorporated into the manuals in accordance with the applicable technical specification.

1.5.1 General Requirements

Furnish operations and maintenance manuals on CD-ROM disk along with a single hard copy. Documents on the CD-ROM disk shall be in portable document format (.pdf); all printed and graphic documents, drawings, and illustrations shall be legible. Hard copy requirements are specified below.

1.5.1.1 Hard Cover Binders

The manuals shall be permanently bound and have a hard cover. The following identification shall be inscribed on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUAL:" and the name, building number, location, and indication of utility or systems covered. Manuals shall be approximately 216 mm by 279 mm (8-1/2 by 11 inches) with large sheets folded in and capable of being easily pulled out for reference. All manuals for a single facility must be similar in appearance.

1.5.1.2 Warning Page

A warning page shall be provided to warn of potential dangers (if they exist), such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, or high pressures. The warning page shall be placed inside the front cover, in front of the title page.

1.5.1.3 Title Page

The title page shall show the name of the preparing firm (designer or contractor) and the date of publication.

1.5.1.4 Table of Contents

Provide in accordance with standard commercial practice.

1.5.2 Equipment Operating, Maintenance, and Repair Manuals

1.5.2.1 General

Separate manuals shall be provided for each utility system as defined hereinafter. Manuals shall be provided in the number of copies specified in the applicable technical section. Manuals shall include, in separate sections, the following information for each item of equipment:

a. Performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates. Marked-up catalogs or catalog pages do not satisfy this requirement. Performance information shall be presented as concisely as possible and contain only data pertaining to equipment actually installed.

b. Catalog cuts showing application information.

c. Installation information showing minimum acceptable requirements.

d. Operation and maintenance requirements. Include adequate illustrative material to identify and locate operating controls, indicating devices and locations of areas or items requiring maintenance.

(1) Describe, in detail, starting and stopping procedures for components, adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions.

(2) Maintenance instructions describing the nature and frequency of routine maintenance and procedures to be followed. Indicate any special tools, materials, and test equipment that may be required.

e. Repair information including diagrams and schematics, guidance for diagnosing problems, and detailed instructions for making repairs. Provide troubleshooting information that includes a statement of the indication or symptom of trouble and the sequential instructions necessary. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings.

f. Parts lists and names and addresses of closest parts supply agencies.

g. Names and addresses of local manufacturers representatives.

1.5.2.2 Facility Heating Systems

Information shall be provided on the following equipment: Boilers, water treatment, chemical feed pumps and tanks, converters, heat exchangers, pumps, unit heaters, fin-tube radiation, air handling units (both heating only and heating and cooling), and valves (associated with heating systems).

1.5.2.3 Air-Conditioning Systems

Provide information on chillers, packaged air-conditioning equipment, towers, water treatment, chemical feed pumps and tanks, air-cooled condensers, pumps, compressors, air handling units, and valves (associated with air-conditioning systems).

1.5.2.4 Temperature Control and HVAC Distribution Systems

a. Provide the information described for the following equipment:

Valves, fans, air handling units, pumps, boilers, converters, and heat exchangers, chillers, water cooled condensers, cooling towers, and fin-tube radiation.

b. Provide all information described for the following equipment:

Control air compressors, control components (sensors, controllers, adapters, and actuators), and flow measuring equipment.

1.5.2.5 Exterior Electrical Systems

Information shall be provided on the following equipment: Power transformers, relays, reclosers, breakers, and capacitor bank controls.

1.5.2.6 Interior Electrical Systems

Information shall be provided on the following equipment: Relays, motor control centers, switchgear, solid state circuit breakers, motor controller, and EPS lighting systems, control systems (wire diagrams and troubleshooting flow chart), and special grounding systems.

1.5.2.7 Energy Management and Control System

The maintenance manual shall include descriptions of maintenance for all equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

1.5.2.8 Domestic Water Systems

The identified information shall be provided on the following equipment: Tanks, unit process equipment, pumps, motors, control and monitoring instrumentation, laboratory test equipment, chemical feeders, valves, switching gear, and automatic controls.

1.5.2.9 Fire Protection Systems

Information shall be provided on the following equipment: Alarm valves, manual valves, regulators, foam and gas storage tanks, piping materials, sprinkler heads, nozzles, pumps, and pump drivers.

1.5.2.10 Fire Detection Systems

The maintenance manual shall include description of maintenance for all equipment, including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.

1.5.2.11 Plumbing Systems

Information shall be provided on the following equipment: Water heaters, valves, pressure regulators, backflow preventors, piping materials, and plumbing fixtures.

1.5.2.12 Cathodic Protection Systems

Information shall be provided on the following material and equipment: Rectifiers, meters, anodes, anode backfill, anode lead wire, insulation material and wire size, automatic controls (if any), rheostats, switches, fuses and circuit breakers, type and size of rectifying elements, type of oil in oil-immersed rectifiers, and rating of shunts.

1.5.2.13 Generator Installations

Information shall be provided on the following equipment: Generator sets, automatic transfer panels, governors, exciters, regulators, starting systems, switchgear, and protective devices.

1.5.2.14 Miscellaneous Systems

Information shall be provided on the following: Communication and ADP systems, security and intrusion alarm, elevators, material handling, active solar, photovoltaic, and other similar type special systems not otherwise specified.

1.6 RECORD DRAWINGS

Record drawings shall be a record of the construction as installed and completed by the Contractor. They are a record of all deviations, modifications, or changes from contract set of drawings (the accepted 100% design drawings), however minor, which were incorporated in the work. They include all the information shown on the contract set of drawings, any Contractor-original drawings, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the contract work.

1.6.1 Contractor-Original Record Drawings

Contractor-original record drawings are those drawings drawn by the Contractor, after acceptance of the 100% design documents and the start of construction, to further explain the Contract documents such as subcontractor submittals for fire protection/detection, communication, and other systems, and accepted Contractor's solutions to problems. Submit these drawings as full-size reproducible sheets and CADD files. CADD files shall conform to the Working CADD file requirements specified in paragraph "Final Record Drawings."

1.6.2 Preliminary Record Drawings

The Contractor shall mark up both a reproducible set and a set of prints to show as-built conditions. These two sets, hereafter called preliminary record drawings, or singly, reproducibles or prints, shall be kept current and available on the jobsite at all times, except as noted below. A member of the Contractor's Quality Control Organization shall be assigned responsibility for the maintenance and currency of the preliminary record drawings. This assignment and any reassignment of duties concerning the maintenance of the record drawings shall be promptly reported to the Contracting Officer's representative for approval. All changes from the contract drawings which are made in the work or additional information which might be uncovered in the course of construction, including uncharted utilities, shall be accurately and neatly recorded as they occur by means of details and notes. All changes and/or required additions to the preliminary record drawings shall be clearly identified in a contrasting color and which is compatible with reproduction of the preliminary record drawings. Preliminary record drawings shall be updated by Friday of each week. During periods when the reproducibles are being copied and are therefore not available at the jobsite, the Contractor shall continue posting all required data to the prints. The Contractor shall minimize the time that the reproducibles are away from the jobsite and shall update them with all as-built data immediately upon their return. The preliminary record drawings 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 Record Drawings." The record drawings shall show the following information, but not be limited thereto:

a. The location and description of utility lines or other installation of any kind or description known to or found 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 150 mm 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 components such as valves, manholes, drop inlets, cleanouts, meter, etc. The general depth range of each underground utility line shall be shown (i.e., 900 mm to 1200 mm in depth). The description of exterior utilities includes the actual quantity, size, and material of utility lines.

b. The location and size of all uncharted existing utilities encountered.

c. The location and dimensions of any changes within the building or structure.

d. Correct grade or alinement of roads, structures or utilities if any changes were made from contract drawings.

e. Correct elevations if changes were made in site grading.

f. 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.

g. The topography and grades of all drainage installed or affected as a part of the project construction.

h. Options

Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the record drawings.

1.6.2.1 Blue Line or Black Line Prints

Blue line or black line prints shall be full size. 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.

1.6.2.2 Prefinal Inspection For Each Item of Work

As part of the prefinal inspection for each item of work, the preliminary record drawings will be reviewed. They shall comply with this specification prior to scheduling the final inspection, and/or prior to substantial completion of the item of work.

1.6.2.3 Preliminary Record Drawing Final Submittal

Prior to scheduling the final acceptance inspection of the last or only bid schedule item of work, the preliminary record drawings shall be completed and delivered to the Contracting Officer's Representative for review and acceptance. If upon review, the drawings are found to contain errors and/or omissions, they will be returned to the Contractor for corrections. Failure of the Contractor to make timely delivery of the preliminary record drawings on any or all items of work will be cause for the Government to delay substantial completion and to assess liquidated damages in accordance with the terms and conditions of the contract.

1.6.2.4 Withholding for Preliminary Record Drawings

Failure by the Contractor to maintain current and satisfactory preliminary record drawings in accordance with these requirements will result in withholding from progress payments 10 percent of the progress payment amount until such time as the record drawings are brought into compliance. This withheld amount will be indicated on monthly payment estimates until the Contractor has fulfilled these contract requirements.

1.6.2.5 Final Inspection

For each interim item of work, furnish a copy of the preliminary record drawings for that item, which the Contractor has reproduced from the approved preliminary record drawing reproducibles, to the Contracting Officer's representative at the time of final inspection for that item. At the time of final inspection on the last or only item of work, the Contractor shall deliver a copy of the complete set of the approved preliminary record drawings to the Contracting Officer's Representative.

1.6.3 Final Record Drawings

Upon approval of the preliminary record drawings, the Contracting Officer will return the approved preliminary record drawing prints back to the Contractor. The Contractor will then modify the CADD files as may be necessary to correctly show all the features of the project as it was constructed by bringing the contract set into agreement with the preliminary record drawings, including adding additional drawings and CADD files as may be necessary. The Contractor shall furnish the as-built drawings in the same file format as the Working CADD files. These CADD files are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until final submittal to the Contracting Officer. Drawings, tracings, or CADD files damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at the Contractor's expense. CADD files will be audited by the Contracting Officer and for accuracy and conformance to the above specified drafting and CADD standards.

1.6.3.1 Drafting

Only personnel proficient in the preparation of engineering drawings and CADD shall be employed to modify the original contract drawings, prepare additional new drawings, and modify the CADD files. All modifications and new drawings shall conform to applicable requirements specified in the paragraph "CADD Standards." The Contractor shall ensure that all delivered CADD digital files and data (e.g., sheet files, model files, cell/block libraries) are compatible with the Government's target CADD system and operating system, and adhere to the standards and requirements specified. The term "compatible" means that data is in native digital format i.e., .dgn (MicroStation) or .dwg (AutoCAD). It is the responsibility of the Contractor to ensure this level of compatibility.

1.6.3.2 CADD Standards

CADD Standards are specified in Section 01016 DESIGN DOCUMENT REQUIREMENTS.

1.6.3.3 Final Revisions

When final revisions have been completed, place the words "REVISED RECORD DRAWING," in letters at least 5 mm high, and the date of completion in the revision block above the latest existing revision notation on each drawing CADD file.

1.6.3.4 Border Sheets

The border sheet to be used for any new record drawings shall be the same as used on the original drawings.

1.6.3.5 Copies of the Final Record Drawings

Blue line or black line prints shall be full size. 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.

1.6.3.6 35mm Microfilm

35mm microfilm furnished by the Contractor shall meet the following requirements.

(1) 35mm film negatives shall be produced from the drawings as corrected to reflect as-built conditions, using a camera designed for micro-filming engineering drawings. Reduction ratio sahll 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 bckground 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, 187 mm by 82 mm (7-3/8" by 3-1/4") , with the title block positioned in the upper left hand corner of the aperature 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) 35mm aperture cards for the originals shall be prepared in accordance with MIL-M-9868E for the diazo copies.

(8) See attached sketch of sample aperture card.

1.6.3.7 Submittal Requirements

The Contractor shall submit to the Contracting Officer the final record drawings, consisting of one set of full size blue line or black line prints, one full size vellum reproducible set, and two sets of corrected CADD files on CD-ROM disks; verification that the CADD files have been

loaded and work on the designated computer systems and are error- and virus-free; the approved preliminary blue lines; two sets of original (silver halide) aperture cards, and two sets of diazo copies of the 35mm aperture cards; and all required reproduced items. All paper prints, reproducible drawings, aperature cards, and CADD files will become the property of the Government.

a. Sustainable Project Rating Tool (SPiRiT)

Submit a final update of the Contractor's Proposal's Sustainable Project Rating Tool (SPiRiT) sheets, indicating the achievement of the listed elements and the achievement level of the various goals listed in Volume II DESIGN AND PERFORMANCE REQUIREMENTS, PERFORMANCE REQUIREMENTS Chapter 111 FACILITY PERFORMANCE, paragraph "Environmental Responsible Design." Provide certification of achievement of the specified rating.

1.6.4 Post-Record Drawing Work

In event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the record drawings, the Contractor shall furnish revised and/or additional drawings (hard copy and CADD files), as required to depict as-built conditions. The requirements for these additional drawings, including CADD files, will be the same as for the record drawings included in the original submission.

1.6.5 Payment for Final Record Drawings

The amount listed for Final Record Drawings in the Price Proposal Schedule will be paid to the Contractor upon the Contracting Officer's acceptance of the completed record drawings.

1.7 ADDITIONAL WARRANTY REQUIREMENTS

The warranty requirements specified in this paragraph are in addition to those specified in the Contract Clause WARRANTY OF CONSTRUCTION in Section 00700 CONTRACT CLAUSES.

1.7.1 Performance Bond

It is understood that the Contractor's Performance Bond will remain effective throughout the life of all warranties and warranty extensions. This paragraph is applicable to the Contractor's Warranty of Construction only and does not apply to manufacturers' warranties on equipment, roofing, and other products.

(a) In the event the Contractor or the Contractor's designated representative fails to commence and diligently pursue any work required under the Warranty of Construction Paragraph within a reasonable time 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 Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the 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.

(b) Warranty repair work which arises to threaten the health or safety

of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be handled by the Contractor on an immediate basis as directed verbally by the Contracting Officer or the Contracting Officer's authorized representative. Written verification will follow verbal instructions. Failure of the Contractor to respond as verbally directed will be cause for the Contracting Officer or the Contracting Officer's authorized representative to have the warranty repair work performed by others and to proceed against the Contractor as outlined in the paragraph (a) above.

1.7.2 Pre-Warranty Conference

Prior to contract completion and at a time designated by the Contracting Officer or Contracting Officer's authorized representative, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of Contract Clause WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer or Contracting Officer's authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue 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, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of Contractor's responsibilities in connection with Contract Clause WARRANTY OF CONSTRUCTION.

1.7.3 Equipment Warranty Identification Tags

The Contractor shall provide warranty identification tags on all equipment installed under this contract. Tags and installation shall be in accordance with the requirements of Paragraph: EQUIPMENT WARRANTY IDENTIFICATION TAGS.

1.7.4 Contractor's Response to Warranty Service Requirements

The following warranty service requirements are applicable to contracts for Fort Hood and will supersede requirements listed in Paragraph: Warranty of Construction. Following notification by the Contracting Officer or the Contracting Officer's Representative, the Contractor shall respond to a warranty service requirement identified by the Contracting Officer's Representative in accordance with the "Warranty Service Priority List" of this program. This list prioritizes warranty work into the categories. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the time frames specified, the Government will perform the work and backcharge the construction warranty payment item established.: [AM #0009]

First Priority 1A Perform on site inspection to evaluate situation, determine course of action, initiate work within 24 hours and work continuously to completion or relief.

Second Priority 1B Perform on site inspection to evaluate situation, determine course of action, initiate work within 48 hours and work continuously to completion or relief.

Third Priority All other work to be initiated within 5 work days and work continuously to completion or relief.

The "Warranty Service Priority List" is as follows:

1A Air Traffic Control and Air Navigation Systems and Equipment.

1A Air Conditioning System
- a. Hospital.
- b. Buildings with computer equipment.
- c. Commissary and Main PX.
- d. Clubs.
- e. Barracks, mess halls, BOQ/BEQ (entire building down).
- f. Troop medical and dental.

1B Air Conditioning Systems
- a. Recreational support.
- b. Air conditioning leak in part of building, if causing damage.
- c. Admin buildings with ADP equipment not on priority list.

1A Doors
- a. Overhead doors not operational.

1A Electrical
- a. Power failure (entire area or any building operational after 1600 hours).
- b. Traffic control devices.
- c. Security lights.

1B Electrical
- a. Power failure (no power to a room or part of building).
- b. Receptacle and lights.
- c. Fire alarm systems.

1A Gas
- a. Leaks and breaks.
- b. No gas to family housing unit or cantonment area.

1A Heat
- a. Hospital/Medical facilities.
- b. Commissary and Main PX.
- c. Clubs.
- d. Area power failure affecting heat.

1B Heat
- a. Medical storage.
- b. Barracks.

1A Intrusion Detection Systems

Finance, PX and Commissary, and high security areas.

1B Intrusion Detection Systems
Systems other than priority 1A.

1A Kitchen Equipment
a. Dishwasher.
b. All other equipment hampering preparation of a meal.

1B Kitchen Equipment
All other equipment not in priority 1A.

1B Plumbing
a. Flush valves.
b. Fixture drain, supply line commode, or water pipe leaking.
c. Commode leaking at base.

1A Refrigeration
a. Commissary.
b. Mess hall.
c. Cold storage.
d. Hospital.
e. Medical storage.

1B Refrigeration
Mess hall - other than walk-in refrigerators and freezers.

1A Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

1B Roof Leaks
Check for location of leak during rain to be repaired on priority 2 (major damage to property is not occurring).

1A Swimming Pools
Chlorine leaks or broken pumps.

1A Tank Wash Racks (Bird Baths)
All systems which prevent tank wash.

1A Water (Exterior)
Normal operation of water pump station.

1B Water (Exterior)
No water to facility.

1A Water, Hot (and Steam)
a. Hospitals.
b. Mess halls.
c. BOQ, BEQ, barracks (entire building).
d. Medical and dental.

1B Water, Hot
No hot water in portion of building listed in priority 1A (items a through c).

1A Sprinkler System
All sprinkler systems, valves, manholes, deluge systems,

and air systems to sprinklers.

Should parts be required to complete the work and the parts are not immediately available the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Contracting Officer's Representative with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractors proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Contracting Officer's Representative will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Contracting Officer's Representative will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.8 EQUIPMENT WARRANTY IDENTIFICATION TAGS

1.8.1 General Requirements

The Contractor shall provide warranty identification tags on all Contractor and Government furnished equipment which he has installed.

1.8.1.1 Tag Description and Installation

The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

1.8.1.2 Sample Tags

Sample tags shall be submitted to the Contracting Officer's Authorized Representative for review and approval. These tags shall be filled out representative of how the Contractor will complete all other tags.

1.8.1.3 Tags for Warranted Equipment

The tag for this equipment shall be similar to the following. Exact format and size will be as approved by the Contracting Officer's Authorized Representative. The Contractor warranty expires (warranty expiration date) and the final manufacturer's warranty expiration dates will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION."

EQUIPMENT WARRANTY CONTRACTOR FURNISHED EQUIPMENT
MFG_____ MODEL NO._____
SERIAL NO._____
CONTRACT NO._____
CONTRACTOR NAME_____
CONTRACTOR WARRANTY EXPIRES_____
MFG WARRANTY(IES) EXPIRE_____

1.8.1.4 Duplicate Information

If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag.

1.8.2 Execution

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor will schedule this activity in the Contractor progress reporting system. The final acceptance inspection is scheduled based upon notice from the Contractor, thus if the Contractor is at fault in this inspection being delayed, the Contractor will, at the Contractor's own expense, update the in-service and warranty expiration dates on these tags.

1.8.3 Payment

The work outlined above is a subsidiary portion of the contract work, and has a value to the Government approximating 5% of the value of the Contractor furnished equipment. The Contractor will assign up to that amount, as approved by the Contracting Officer's Authorized Representative.

1.8.4 Equipment Warranty Tag Replacement

Under the terms of this contract, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include an updated warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and installed by the Contractor, and shall be identical to the original tag, except that the Contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement.

1.9 INVENTORY OF CONTRACTOR FURNISHED AND INSTALLED EQUIPMENT

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, sinks, water closets, lavatories,

urinals, shower stalls, and any other large plumbing fixtures, light fixtures, 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, etc.), Output (power, voltage, BTU, tons, etc.), Size or Capacity (tanks), and net inventory costs; any other data necessary to describe item and shall list all warrantors and warranty periods for each item of equipment. Final list shall be turned over to the Authorized Representative of the Contracting Officer at the time of the Contractor's quality control completion inspection.

1.10 REAL PROPERTY MAINTENANCE RECORDS

Prepare DD Form 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, so that the bases can update their real property maintenance records, in accordance with the applicable bases' DPW or Base Civil Engineers' (BCE) office. This form shall contain as many of the resource code items with cost and quantity data as can be developed from the task order final documents. Obtain a general list of resource codes with cost and quantity data from the applicable bases' DPW or BCE office. This form and a sample of a completed form are attached to the end of this Section. An electronic file of the form, DD1354.frl, for use with Delrina Perform Pro Form Filler, version 16 Jul 1992, is located on the Solicitation CD-ROM disk. Contractor shall prepare the DD1354 using Delrina Perform Pro Form Filler. Contractor shall obtain DPW or BCE approval of a Draft DD1354 not less than 30 days prior to anticipated Task Order completion date. The Final DD 1354 shall be provided at the Final Inspection for Corps of Engineers and DPW or BCE signature.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --