

## CONTRACTING NOTES:

1. Bid Opening Date has been re-scheduled  
to  
08 July 2004, 1400 (2 PM, AST).

Please refer to SF 30, Block 14.

2. A new bid schedule was published in Amendment 3. Please use this revised schedule for submissions. Any bid packages received not using this revised schedule may be subject to rejection as “unresponsive” bids.

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE 1 OF 1 PAGES
2. AMENDMENT/MODIFICATION NO. R0004	3. EFFECTIVE DATE 06/15/04	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY US ARMY ENGINEER DISTRICT, AK CEPOA-CT-CM (W911KB) PO BOX 6898 ELMENDORF AFB, AK 99506-0898 KEVIN MALOY (907)753-5594	CODE J4P0000	7. ADMINISTERED BY (If other than Item 6) US ARMY ENGINEER DISTRICT, AK CEPOA-CT-CM PO BOX 6898 ELMENDORF AFB, ALASKA 99506-6898	CODE DACA85
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		(X)	9A. AMENDMENT OF SOLICITATION NO. W911KB-04-B-0002
CODE 089C4 FACILITY CODE		(X)	9B. DATED (SEE ITEM 11) 04/15/03
			10A. MODIFICATION OF CONTRACT/ORDER NO.
			10B. DATED (SEE ITEM 13)

**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.  
Offer 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 0 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 ACKNOWLEDGEMENT 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 you 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)**

**PROJECT TITLE AND LOCATION: Modified MOUT and Range Upgrade Facility, Ft Wainwright, Alaska**

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

(X) 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.)**

**BID OPENING DATE IS EXTENDED TO 08 JUL 2004, at 2:00 pm, local time, at the US Army Engineer District-Alaska, 2204 Third St, Elmendorf AFB, Alaska.**

**NOTICE TO OFFERORS: PLEASE MARK OUTSIDE OF ENVELOPE IN WHICH BID IS SUBMITTED TO SHOW AMENDMENTS RECEIVED. YOU ARE REQUIRED TO ACKNOWLEDGE RECEIPT OF THIS AMENDMENT ON THE REVERSE SIDE OF STANDARD FORM 1442.**

**IMPORTANT NOTE: DUE TO CONSTRUCTION, BONIFACE GATE IS CLOSED FROM APR 15 - JUL 12, 2004- SEE SECTION 00100 PARA 1.6.2.1 and keep in mind the base is still under tight security measures and access to non-DOD personnel is limited or restricted and requires extra time to process through the MULDOON GATE**

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 SIGNER (Type or print)	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED

<b>SOLICITATION, OFFER, AND AWARD</b> <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER <b>W911KB-04-B-0002</b>	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED <b>04/15/04</b>	PAGE OF PAGES
	<b>IMPORTANT - The "offer" section on the reverse must be fully completed by the offeror.</b>			

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
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7. ISSUED BY CODE <b>W911KB</b>	8. ADDRESS OFFER TO <b>SEE ITEM 7</b>
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US ARMY ENGINEER DISTRICT, ALASKA  
CEPOA-CT-CM (W911KB)  
PO BOX 6898  
ELMENDORF AFB, AK 99506-6898

9. FOR INFORMATION CALL AM# 1. <input checked="" type="checkbox"/> <b>A. NAME</b> <del>SUSAN COYNER</del> <b>KEVIN MALOY</b>	<b>B. TELEPHONE NUMBER (include area code) (NO COLLECT CALLS)</b> <del>(907)753-2838</del> <b>5594...AM#1</b>
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**SOLICITATION**

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

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date):

NAICS: 237990 (Size Standard: \$28.5 million)  
 PROJECT TITLE/LOCATION: MOUT Upgrade, Ft Wainwright, Alaska  
 COMPETITIVE 8(a) SET-ASIDE  
 DESCRIPTION OF WORK: Construct a live-fire Infantry Squad Battle Course (ISBC), Urban Assault Course (UAC), Shoot House Breach Facility, Ammunition Breakdown Facility, Warm up Buildings and Latrines. Project includes an After Action Review (AAR) Facility from which simulations and training operations will be controlled, monitored and reviewed. Supporting facilities include utilities, electric service, access roads and parking areas, and information systems. The ISBC will be constructed in the Ft Wainwright Yukon Training Area. All other facilities are located within the existing training range area south of the Richardson highway. Responders are advised that this requirement may be delayed, canceled, or revised at any time during the solicitation and/or final award process based on decisions related to DoD changes and disposition of the Armed Services.

**THIS SOLICITATION UTILIZES ELECTRONIC BID SETS (EBS) AND WILL BE AVAILABLE FOR DOWNLOADING THROUGH OUR WEBSITE AT NO CHARGE -- <https://ebs.poa.usace.army.mil/AdvertisedSolicitations.asp>**

11. The Contractor shall begin performance within 10 calendar days and complete it within 475 calendar days after receiving

award,  notice to proceed. This performance period is  mandatory,  negotiable. (See REF FAR 52.211-0010)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i>	12B. CALENDAR DAYS
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 1 copies to perform the work required are due at the place specified in Item 8 by 2:00 pm (hour) local time AM#4... 08 JUL 04 ...AM#4 If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee  is,  is not required.

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

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

## CONTINUATION SHEET

Amendment No. R0004

Page: 2

a. The following drawings are substituted for the superseded drawings.

None

b. The following reissued and/or revised documents are substituted for the superseded documents. The identifier "AM #4" appears before and after new and revised material, except as noted below.

## TECHNICAL SPECIFICATIONS:

## SECTION 02313

## Paragraph 1.4 SOURCE OF MATERIALS

c. The following section (including submittal register) is deleted.

None

d. The following section (including submittal register) is added.

None

e. NOTICE TO BIDDERS: PLEASE MARK OUTSIDE OF ENVELOPE IN WHICH BID IS SUBMITTED TO SHOW AMENDMENTS RECEIVED. YOU ARE REQUIRED TO ACKNOWLEDGE RECEIPT OF THIS AMENDMENT ON THE REVERSE SIDE OF STANDARD FORM 1442.

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SECTION 02313

EARTHWORK FOR BUILDINGS

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 within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 117	(1995) Materials finer than 0.075mm sieve in mineral aggregates by washing
ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	(2003) Sampling Aggregates
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2002) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2167	(1994; R 2001) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2922	(2001) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(2001) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

1.2 DEFINITIONS

1.2.1 Nonfrost Susceptible Soils

Nonfrost susceptible soils are inorganic soils containing less than three percent by weight of grains finer than 0.02 mm. The methods of test used shall be the ASTM C 117, ASTM C 136, ASTM D 75, and ASTM D 422.

1.2.2 Classified Fill and Backfill

Approved, well-graded, non-frost susceptible material consisting of sand, gravel or crushed rock, and free of muck, frozen material, organic materials, refuse or construction debris. Classified Material should contain not more than 60 percent, by weight, passing the 4.7 mm U.S. sieve, not more than six (6) percent passing the .075mm sieve, and not more than three (3) percent smaller than 0.02 mm, all measured relative to the fraction passing the 75-mm sieve. The maximum particle size should not exceed two-thirds of the lift thickness.

1.2.3 Surfacing Material

Surfacing material for gravel surfaced roads should be crushed aggregate conforming to the following gradation:

SURFACING MATERIAL

<u>Sieve Size (mm)</u>	<u>Percent Finer By Weight</u>
25.0	100
9.5	50-85
4.7	36-65
2.00	25-50
0.425	15-30
0.075	2-8
0.020	0-3

1.2.4 Unclassified Fill and Backfill

Approved material with a Plasticity Index (PI) less than six (6) consisting of silt, sand, gravel or crushed rock, and free of muck, frozen material, organic materials, refuse or construction debris. Unclassified Material should contain not more than 15 percent, by weight, passing the 0.075 mm sieve, measured relative to the fraction passing the 75-mm sieve. The maximum particle size should not exceed two-thirds of the lift thickness.

1.2.5 Fill

Fill is considered to be material placed above the original ground line.

1.2.6 Backfill

Backfill is considered to be material placed in an excavation made under this contract.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

##### Compaction Test Plan

The proposed location of all compaction tests, in 3 copies prior to commencing operations.

##### Heating and Monitoring Plan

The procedures proposed for winter protection of foundations and slabs by heating, and monitoring temperatures.

Submit 15 days prior to starting work.

#### SD-09 Manufacturer's Field Reports

##### Compaction Test Report

Test results, with amended compaction test plan as specified herein. A copy must be provided before the fill or backfill will be accepted as completed work.

### 1.4 SOURCE OF MATERIALS

Excavated shall be used to the maximum extent possible for fill and backfill, or as directed. Only clean, non-contaminated material shall be used as backfill. Excavated material not used shall be wasted as directed, provided, however, that no material shall be wasted without prior approval.

Classified fill and backfill and unclassified fill and backfill shall be obtained by selection from the excavated material. **AM#4**...If the excavation is insufficient in quantity, or unsuitable, additional materials may be obtained from the designated borrow pit or Non-Government Barrow Source....**AM#4**

### 1.5 MAXIMUM DENSITY DETERMINATIONS

#### 1.5.1 Definition

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

#### 1.5.2 Density Tests

- a. Characteristics of backfill materials shall be determined in accordance with particle size analysis of soils ASTM D 422 and moisture-density relations of soils ASTM D 1557. A minimum of one particle size analysis and one moisture-density relation test shall be performed on each different type of material used for bedding and backfill.
- b. Test shall be performed per paragraph TESTING. Field in-place density shall be determined in accordance with ASTM D 1556, ASTM D

2167, or ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using the sand cone method as described in paragraph Calibration of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contractor Officer. Copies of calibration curves, results of calibration tests, and field and laboratory density tests shall be furnished to the Contracting Officer.

#### 1.6 SUBSURFACE INVESTIGATIONS

Explorations consisting of drill holes and/or test pits have been made at the site of the building to assist the Contractor in ascertaining the character of the excavation material to be encountered; however, the Government does not guarantee that materials other than those disclosed by the drill holes or opened pits will not be encountered, or that the proportions of the various materials will not vary from those indicated by the explorations. Additional data on subsurface conditions are available for review in the Office of the Alaska District Engineer.

#### PART 2 PRODUCTS (NOT APPLICABLE)

#### PART 3 EXECUTION

##### 3.1 CLEARING AND GRUBBING

Unless otherwise shown, the areas within lines 7,620 mm outside of each building and structure line shall be cleared and grubbed of trees, stumps, roots, brush and other items that would interfere with construction operations. Stumps, logs, roots more than 40 mm in diameter, and other organic or metallic debris shall be completely excavated and removed within building and structure lines, and shall be excavated and removed to a depth not less than 460 mm below original ground surface in the remainder of the cleared areas. The resulting depressions shall be completely filled and compacted in accordance with the applicable paragraph of this specification unless further excavation is required. Building and utilities materials shown to be salvaged or to be installed in the work under this contract shall be removed carefully by workmen skilled in the particular trade involved.

##### 3.1.1 Disposal of Cleared and Grubbed Material

Material removed and not designated as salvage material shall be disposed of as specified or shown. To the maximum extent possible, material will be chipped and spread as erosion control material. Any logs too large to chip will be disposed of offsite by the contractor.

##### 3.2 STRIPPING OF TOPSOIL

Where indicated or directed, topsoil shall be stripped to a depth as

directed. Topsoil shall be spread on areas already graded and prepared for topsoil, or transported and deposited in stockpiles convenient to areas that are to receive application of the topsoil later, or at locations indicated or specified. Topsoil shall be kept separate from other excavated materials, brush, litter, objectionable weeds, roots, stones larger than 50 mm in diameter, and other materials that would interfere with planting and maintenance operations. Any surplus of topsoil from excavations and grading shall be stockpiled in locations indicated. See Section 02921 SEEDING for definition of Topsoil.

### 3.3 GENERAL EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified and shall include trenching for utility systems to a 1,525 mm outside the building line and all work incidental there to. Satisfactory excavated materials shall be transported to and placed in fill or embankment within the limits of the work.

Unsatisfactory materials encountered within the limits of the work shall be excavated below grade and replaced with satisfactory materials as directed.

Such excavated material and the satisfactory material ordered as replacement shall be included in excavation. Surplus satisfactory excavated material not required for fill or embankment shall be disposed of in areas approved for surplus material storage or designated waste areas. Unsatisfactory excavated material shall be disposed of in designated waste or spoil areas. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be excavated from the borrow areas indicated or from other approved areas selected by the Contractor as specified.

#### 3.3.1 Field Modifications

If nonfrost susceptible soils are encountered within the depth below finished grade as indicated on the drawings for depth of excavation, the Contractor shall excavate only to depths such that the nonfrost susceptible materials are uncovered or to the bottom of the footing or slab whichever is greater. If unsuitable soil conditions in the opinion of the Contracting Officer are encountered at the excavation lines specified, he may direct that extra excavation performed. The Contractor shall perform such extra excavation only when so directed in writing, and the extra work shall include both the necessary excavation and the placement and compaction of backfill material required to restore the excavation to the depth indicated on the drawings. When the excavation is carried to a line either above or below the elevations specified, an equitable modification of the contract price will be made. Backfill material shall not be placed until the Contractor has taken cross sectional elevations and measurements of the area excavated in the presence of the Contracting Officer.

#### 3.3.2 Drainage

Excavation shall be performed in the dry. The excavations and the area immediately surrounding each excavation for a distance of 3,000 mm,

including slopes and ditches, shall be continually and effectively drained away from the excavation. The excavation for inlet, outlet, and diversion ditches and the furnishing and operating of dewatering equipment, as necessary, shall be performed under this specification. Suitable precautions shall be taken to prevent any erosion from undercutting previously concreted footings and slabs. Excavations shall be kept free from ponding until the permanent work in the excavations has been completed and accepted, and the excavations have been completely backfilled.

### 3.3.3 Shoring

Shoring, including sheet piling, shall be installed during excavation where required for the protection of workmen, banks, structures and utilities.

### 3.3.4 Disposal of Excavated Material

Suitable excavated material shall be placed in the proper section of the permanent site work required for the project under contract. Suitable material that cannot be placed readily in the permanent work shall be separately stockpiled as directed. Stockpiles shall be kept in a neat, well-drained and workable condition at all times. Material in excess of that required for the permanent work under this contract and any unsuitable material shall be disposed of as specified or shown. No excavated material shall be deposited at any time in a manner that may endanger any structure by direct pressure, by overloading banks contiguous to the operations, or that may be in any way detrimental to the completed work or obstruct any existing drainage course.

### 3.3.5 Protection of Utilities

When utility lines are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time for the necessary measures to be taken to prevent interruption of the service. The existing utilities to be retained and utilities constructed under this contract that are shown on the drawings or the location of which is made known to the Contractor and adjustment in payment will be made by the Government at rates determined or approved by the Contracting Officer. Inactive or abandoned utilities shall be removed and the remaining ends capped or plugged outside the building excavation line.

## 3.4 FILL AND BACKFILL

AM# 3...No fill or backfill shall be placed until the subgrade has been checked and approved, and in no case shall it be placed on a subgrade that is muddy. Fill or backfill shall not be placed against foundation walls prior to 7 days after completion of the wall and then only after approval. Fill or backfill shall be brought up evenly on each side of wall as far as practicable. Heavy equipment for spreading and compacting backfill shall not be operated closer to the wall than a distance equal to the height of the backfill above top of footing. Care shall be exercised to avoid any wedging action or eccentric action upon or against the structure, and to avoid any disturbance or damage to the work. Each layer of fill or backfill shall be spread, and moistened, or dried by aeration, to the moisture content required to attain the specified degree of compaction....AM# 3

#### 3.4.1 Classified Fill and Backfill

Where classified fill or backfill is shown on the drawings, or is required for additional excavation found necessary by the Contractor for its operations, such fill shall consist of material as herein before specified and it shall be placed in layers not exceeding 200 mm in loose thickness, uniformly compacted to at least 95 percent compaction, unless otherwise shown on the drawings, with vibratory, or equal, machine compaction equipment of an approved type. Layer thickness shall not exceed 100 mm where power-driven hand tampers are used. Portions of any layer in which the materials become segregated to the extent that the required percent compaction cannot be attained, shall be removed and replaced with satisfactory materials, or blended with additional material until segregation is eliminated and specified percent compaction can be attained.

Where classified fill or backfill extends below the footings, it shall also extend to a vertical line 1,070 mm outside the projected exterior wall line, or to the lines as shown on the drawings.

#### 3.4.2 Unclassified Fill and Backfill

After completion of foundation footings and wall, and other construction below the elevation of the final grades, and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Backfilling or fill placed outside the exterior walls and above the bottom of the footings shall be unclassified, except where otherwise indicated on the drawings, and shall be placed in horizontal layers not in excess of 200 mm, (where hand tampers are used) in thickness. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to at least 85 percent compaction. Backfill shall be brought to a suitable elevation above grade to provide for anticipated settlement and shrinkage thereof. Basement walls and floor slabs shall be protected from frost damage where construction is discontinued for the winter. To preclude frost damage to structures without basements, where construction is to be discontinued for the winter, no unclassified material shall be placed adjacent to exterior walls prior to placement of classified material within the structure.

#### 3.4.3 Winter Protection

The Contractor shall take adequate precautions to protect foundations and floor slabs from damage due to frost action. It shall be the responsibility of the Contractor to repair or replace all such damage at no additional cost to the Government, and with no extension of the contract completion date. If, in the opinion of the Contracting Officer, repair of damage will result in an unsuitable facility, replacement of damaged portions of work will be directed. The following minimum requirements shall be met:

##### 3.4.3.1 Backfilling

Exterior foundation footings and walls for slab-on-grade structures shall be backfilled to finished grade prior to the ambient air temperature falling below 0 degrees C. The backfill and/or insitu material shall be

complete within a minimum of 1525 mm each side of the footing or wall. In lieu of this backfilling, the exterior footings may be heated as specified below. To preclude frost damage to slab-on-grade structures during winter construction, no unclassified material shall be placed adjacent to exterior walls prior to placement of classified material within the structure.

#### 3.4.3.2 Heating

Exterior foundation footings and walls for structures with basements or crawl spaces, and all interior footings and floor slabs for structures with basements, crawl spaces or slab-on-grade construction, shall be protected as specified herein. When the ambient air temperature is below 0 degrees C, foundation footings or walls are not backfilled, the entire structure, to include all the footings or walls, shall be heated to 4.5 degrees C minimum. All temperatures shall be constantly and adequately monitored. The Contractor shall submit a Heating and Monitoring Plan describing the proposed method(s) to be used for winter protection.

#### 3.4.3.3 Alternatives

The Contractor may request an alternative method for winter protection by submitting Heating and Monitoring Plan in writing to the Contracting Officer for approval.

#### 3.4.3.4 Survey

The Contractor shall survey the elevations of all footings and slabs throughout the freezing season as directed by the Contracting Officer. These elevations shall be used to detect any movement of the footings and slabs, and to indicate the adequacy of the precautions taken.

### 3.5 OPERATION OF BORROW PITS

#### 3.5.1 General

Borrow pits shall be opened and operated by the Contractor within the borrow areas shown on the drawings for the production of borrow materials required to complete the work under this section. Within the general borrow area, the Contracting Officer will designate a specific area for production of borrow materials required for work in this contract. The method of operation the pits will be subject to approval in order to obtain materials conforming to the specified requirements, to insure utilization of available materials, the pits shall be opened in such manner as to expose the vertical faces of the deposit for suitable working depths. All strata and pockets of unsuitable materials overlying or occurring in the deposit shall be wasted as directed. Unless otherwise indicated on the drawings, pits shall be opened and excavated to a minimum depth of 6 meters below the groundwater level existing at the time of borrow operations. Where pits are operated above groundwater level, excavation shall be to a maximum depth of 6 meters below original ground surface. The Government guarantees that sufficient quantities of material can be obtained from the designated area; however, the amount of work involved, the equipment required or the amounts of material required to be processed in order to produce sufficient quantities of suitable materials shall be the

responsibility of the Contractor and the Government will not be liable for the cost resulting from such work or waste. Permafrost may be encountered.

Frozen soils of undetermined extent are known to exist within the general borrow area. It is usual for seasonal frost to exceed 3 meters in depth. Preliminary approval of borrow pits shall not mean that all materials found in the deposit will be acceptable and the right is reserved to reject certain areas, strata, or channels within the areas and zones designated on the drawings when, in the opinion of the Contracting Officer, the material is unsatisfactory for the work under this section of the specifications. All necessary clearing, the grubbing and stripping of overburden of borrow pits, the disposal of waste and debris there from, and satisfactory drainage of the borrow pits shall be considered as incidental operations to the borrow excavations and shall be performed by the Contractor at no additional cost to the Government. As other contractors may be at work in the general borrow pit area, the Contractor shall develop operating procedures to eliminate all interference possible between its own and other contractor personnel and equipment, and such procedures shall be approved, prior to initiation of the work.

#### 3.5.2 Disposal of Waste

All waste materials from stripping operations, and processing operations, and all other material designated as unsuitable by the Contracting Officer for use in the work, shall be disposed of in the designated portion of the borrow area, or as directed. Material meeting criteria may be utilized for earthwork under other sections of this specification.

#### 3.5.3 Final Clean-up

Upon completion of the work covered by this contract, the Contractor shall leave the Government-owned borrow areas and adjacent premises in a satisfactory condition, with free drainage to adjacent drainage area.

#### 3.6 ACCESS TO JOBSITE

The Contractor shall, for the duration of this contract, provide bridging of excavation or other means of access to existing structures or construction sites in the areas covered by this contract.

#### 3.7 WEATHER LIMITATIONS

It shall be the responsibility of the Contractor to protect all areas of completed work against any detrimental effects due to weather, by approved methods. Any areas of completed work that are damaged by freezing or rain, shall be reconditioned, reshaped and recompacted by the Contractor in conformance with the requirements of this specification without additional cost to the Government.

#### 3.8 REPAIR OF EXISTING WORK

All sidewalks, fences, poles and other existing feature that is to be retained but has been damaged or removed as a result of performance of the work shall be repaired or replaced in kind in a satisfactory manner.

### 3.9 CLEANING UP

The Contractor shall at all times keep the construction area, including storage areas used by it, free from accumulations of waste materials or rubbish and, prior to completion of the work, remove any rubbish from and about the premises and all tools, equipment and materials not the property of the Government. Upon completion of the construction, the Contractor shall leave the work and premises in a clean, neat and satisfactory condition.

### 3.10 BLASTING

Blasting operations, regardless of type, shall not be done.

### 3.11 TESTING

Compaction tests, and gradation and nonfrost susceptibility test, shall be performed on each layer of compacted material placed. Testing shall be the responsibility of the Contractor and shall be performed by an independent testing agency satisfactory to the Contracting Officer. The Contracting Officer may direct that the tests be taken at locations other than those shown on the submitted compaction test plan and that additional test be taken to supplement these required tests. The Contractor shall remove and replace nonconforming materials and shall recompact and retest failed and replaced areas until the specified degree of compaction is obtained. The Contractor shall amend its submitted compaction test plan to show the exact location and number of test taken. This plan shall be keyed to the test results. The compaction test report of each test shall reflect the type of test procedure and, for compaction tests, the volume or unit weight of the standard and the volume or unit weight of the compacted soil. The record shall also reflect the firm or person that performed the test, the project title and contract number. The area referred to hereinafter which determines the minimum number of test required shall be an area that is compacted in one continuous operation.

- a. The following density test are required beneath structures with on-grade concrete floor slabs and when uniform compaction requirements are specified for beneath footings and slabs. The number of tests shall apply to each layer of material placed.
  - (1) Compacted Area: 50 square meters or less. A minimum of two tests or one test for each 12 square meters of area, whichever will provide the greatest number of tests.
  - (2) Compacted Area: Between 50 and 360 square meters. A minimum of four tests.
  - (3) Compacted Area: 360 square meters or greater. One test for each 90 square meters of area.
- b. The following density tests are required beneath footings for structures with elevated floors (crawl space) and structures where the compaction requirements beneath footings and floor slabs vary. The number of tests shall apply to each layer of material placed.

- (1) Continuous Footings: One test for each 15 meters of continuous footing for walls over 30 meters long or a minimum of two tests per wall, whichever provides the greatest number of tests.
  - (2) Column Footings: One test per footing.
- c. Classified materials in-place are sampled and tested for gradation and nonfrost susceptibility requirements at least once for every 75 compacted cubic meters or portion thereof. For these tests, gradation shall be determined in accordance with ASTM C 136, with ASTM C 117 used to determine minus 0.075 mm sieve material and ASTM D 422 used to determine minus 0.02 mm material.

3.12 **AM# 3...**ATTACHMENTS**...AM# 3**

**AM# 3...**Test Soil Boring Logs**...AM# 3**