

| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | 1. CONTRACT ID CODE | PAGE OF PAGES | |
|--|----------------------------------|--|--|---|---|
| | | | J | 1 | 2 |
| 2. AMENDMENT/MODIFICATION NO. 0001 | 3. EFFECTIVE DATE 15-Mar-2002 | 4. REQUISITION/PURCHASE REQ. NO. W807PM-1338-9343 | 5. PROJECT NO.(If applicable) | | |
| 6. ISSUED BY VBURG CONSOL CONTRACTING OFC 4155 CLAY ST VICKSBURG MS 39183-3435 | CODE DACW38 | 7. ADMINISTERED BY (If other than item 6) | | CODE | |
| | | See Item 6 | | | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) | | | X | 9A. AMENDMENT OF SOLICITATION NO. DACW38-02-B-0010 | |
| | | | X | 9B. DATED (SEE ITEM 11) 01-Mar-2002 | |
| | | | | 10A. MOD. OF CONTRACT/ORDER NO. | |
| | | | | 10B. DATED (SEE ITEM 13) | |
| CODE | FACILITY CODE | | | | |
| 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS | | | | | |
| <input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. | | | | | |
| <p>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:</p> <p>(a) By completing Items 8 and 15, and returning <u>1</u> 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 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.</p> | | | | | |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required) | | | | | |
| 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14. | | | | | |
| 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 <input type="checkbox"/> is not, <input type="checkbox"/> 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.) Reference IFB No. DACW38-02-B-0010 for FC/MR&T, Yazoo Basin, Yalobusha River Watershed, Calhoun County, MS, DEC Project, Box Culvert Grade Control Structures, Walnut Creek & Meridian Creek, BC-00-02, scheduled to open April 2, 2002 at 1400 hours, Local time, is amended as follows: SEE CONTINUATION PAGE FOR CHANGES | | | | | |
| 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 | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA | | 16C. DATE SIGNED | |
| _____ (Signature of person authorized to sign) | | BY _____ (Signature of Contracting Officer) | | 15-Mar-2002 | |

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SPECIFICATIONS

1. SECTION 02542- STONE PROTECTION FOR STRUCTURES is deleted in its entirety and replaced with the enclosed revised SECTION 02542- STONE PROTECTION FOR STRUCTURES.
2. STONE GRADATION CURVE FOR M90 STONE IS HEREBY DELETED.

DRAWINGS

ALL EXISTING DRAWINGS ARE DELETED AND REPLACED WITH THE ENCLOSED REVISED DRAWINGS.

Page revised by this amendment have the notation "Revised by Amendment 0001" at the bottom of the page.

Encls: Section 02542 – Stone Protection for Structures
Revised Drawings

The date and time for bid opening remains unchanged.

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DIVISION 02 - SITE WORK

SECTION 02542

STONE PROTECTION FOR STRUCTURES

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SECTION 02542

STONE PROTECTION FOR STRUCTURES

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 127 (1988; R 1993e1) Specific Gravity and Absorption of Coarse Aggregate

ASTM C 295 (1998) Petrographic Examination of Aggregate for Concrete

CORPS OF ENGINEERS (COE)

COE CRD-C 144 (1992) Testing Stone for Resistance to Freezing and Thawing

COE CRD-C 169 (1997) Resistance of Rock to Wetting and Drying

1.2 GOVERNMENT TESTING AND STUDIES

1.2.1 Stone

1.2.1.1 General

All stone shall be durable material as approved by the Contracting Officer. In case an unlisted source is to be used, the Contractor shall show that an adequate quantity of material is available and provide quality test data. Stone shall be of a suitable quality to ensure permanence in the structure and in the climate in which it is to be used. It shall be free from cracks, seams and other defects that would tend unduly to increase its deterioration from natural causes. The stone shall be clean and reasonably free from earth and dust and shall contain no refuse.

1.2.1.2 Sources

Stone shall be furnished from any of the sources listed at the end of this section, or at the option of the Contractor may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions herein stated. If the Contractor proposes to furnish stone from a source not currently listed at the end of this section, the Government will conduct a quarry investigation and evaluate the quality test data provided by the contractor to determine whether acceptable stone can be produced from the proposed source. Satisfactory service records on other work may be acceptable. In order for stone to be acceptable on the basis of service records, stone of a similar size must have been placed in a similar thickness and exposed to weathering

under similar conditions as are anticipated for this contract, and must have satisfactorily withstood such weathering for a minimum of 20 years.

a. List of Sources. On the basis of information and data available to the Contracting Officer, stone meeting the quality requirements of these specifications has been produced from the sources listed at the end of this section.

b. Selection of Source. The Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish stone. If the Contractor proposes to furnish stone from a source not listed at the end of this section, he may designate only a single unlisted source for stone and he shall notify the Contracting Officer at least 60 workdays before the stone leaves the quarry. It is the Contractor's responsibility to determine that the stone source or combination of sources selected is capable of supplying the quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work. Samples for acceptance testing shall be provided in accordance with paragraph EVALUATION TESTING. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed at the end of this section at no additional cost to the government.

c. Acceptance of Materials. Acceptance of a source of stone is not to be construed as acceptance of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for stone as determined by the Contracting Officer. Materials produced from a listed or unlisted source shall meet all the requirements herein.

1.3 SUBMITTALS

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

SD-09 Reports

Gradation Test; FIO. Evaluation Tests; FIO.

The gradation tests shall be submitted using the GRADATION TEST DATA SHEET enclosed at end of this section.

Quality test on the stone in accordance with paragraph EVALUATION TESTING shall be the responsibility of the Contractor and submitted for approval prior to delivery of such material to the worksite.

Filter Material; FIO.

Test reports shall be submitted attesting that the filter material meets the requirements specified.

SD-13 Certificates

Filter Material; FIO. Stone; FIO. Laboratory; FIO.

Certificates of compliance attesting that the materials meet specification

requirements shall be submitted to the Contracting Officer.

A copy of the testing laboratory's certification and inspection report shall be submitted along with actions taken to correct deficiencies.

PART 2 PRODUCTS

2.1 FILTER STONE

Filter material shall consist of filter stone and engineering fabric. Engineering fabric shall be as specified in Section 02213 ENGINEERING FABRIC. The filter stone shall be composed of tough, durable particles, reasonably free from thin, flat and elongated pieces, and shall contain neither organic matter nor soft, friable particles in quantities considered objectionable by the Contracting Officer. Grading shall conform to the following requirements:

FILTER STONE

| | |
|---------|--------|
| 100 mm | 100 |
| 75 mm | 70-100 |
| 50 mm | 25-100 |
| 25 mm | 5-70 |
| 12.5 mm | 0-30 |
| 6.25 mm | 0-5 |

The filter material shall be well-graded between the limits shown. At least one test shall be performed on each 1000 metric tons to be delivered to the project site. All points on individual grading curves obtained from representative samples of filter stone shall lie between the boundary limits as defined by smooth curves drawn through the tabulated gradation curves plotted on ENG FORM 2087 or similar form. The individual gradation curves within these limits shall not exhibit abrupt changes in slope denoting either skip grading or scalping of certain sizes or other irregularities which would be detrimental to the proper functioning of the filter.

2.2 RIPRAP

2.2.1 General

Only quarried stone shall be used. Riprap quality shall be as specified in paragraph GOVERNMENT TESTING AND STUDIES, subparagraph STONE. Gradation shall conform to the table(s) below and to the plate(s) attached at the end of this section. A maximum of 10 percent flat and elongated pieces will be acceptable. A flat and elongated piece of riprap is defined as a stone with either the width or thickness of the piece being less than one-third of the length.

TABLE I
(FOR RIPRAP "M40")

| PERCENT LIGHTER BY WEIGHT (SSD) | LIMITS OF STONE WEIGHT, kg |
|------------------------------------|-------------------------------|
| 100 | 40 - 20 |
| 50 | 20 - 10 |
| 15 | 10 - 2.5 |

TABLE II
(FOR RIPRAP "M90")

| PERCENT LIGHTER BY WEIGHT (SSD) | LIMITS OF STONE WEIGHT, kg |
|------------------------------------|-------------------------------|
| 100 | 90 — 35 |
| 50 | 40 — 20 |
| 15 | 20 — 5 |

2.2.2 Evaluation Testing

If the Contractor proposes to furnish stone from an unlisted source, the Contractor shall have evaluation tests performed on stone samples collected from the proposed source. The tests to which the stone shall be subjected include petrographic examination (ASTM C 295), specific gravity, unit weight, and absorption (ASTM C 127), resistance of stone to freezing and thawing (COE CRD-C 144), and if sandstone is used, resistance to wetting and drying in accordance with COE CRD-C 169.

a. Unit Weight and/or Absorption. Stone shall weigh more than 2,480 kg/cubic meter. The stone shall have an absorption less than 2 percent unless other tests and service records show that the stone is satisfactory. The method of test for unit weight and absorption will be ASTM C 127, except the unit weight will be calculated in accordance with Note No. 5 using bulk specific gravity, saturated surface dry.

b. Resistance to Freezing and Thawing. Stone when tested in accordance with COE CRD-C 144 shall have a loss of less than 5 percent.

c. Resistance to Wetting and Drying. This test shall only be required to be performed on sandstone samples. When tested in accordance with COE CRD-C 169 (35 cycles), there shall be a loss of less than one percent.

d. Samples. Samples of stone from a source not listed at the end of this section shall be taken by a representative of the Quarry under the supervision of the Contracting Officer for testing and acceptance prior to delivery of any stone from this source to the site of the work. Samples shall consist of at least three pieces of stone, roughly cubical in shape and weighing not less than 34 kg each. The samples shall be shipped at the Contractor's expense to a laboratory certified by the government to perform the required tests.

e. Tests. The tests shall be conducted by the Contractor in accordance with applicable Corps of Engineers methods of tests given in the Handbook for Concrete and Cement, and shall be performed at a laboratory certified by the government. The cost of testing shall be borne by the Contractor.

2.2.3 Gradation Test

The Contractor shall perform a gradation test or tests on the riprap at the quarry in accordance with paragraph STANDARD TEST METHOD FOR GRADATION OF RIPRAP AND GRADED STONE. The sample shall be taken by the Contractor in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer not less than 3 days in advance of each test. In the event of unavailability of a Government representative; the Contractor shall perform the tests and certify to the Contracting Officer that the

riprap shipped complies with the specifications. At least one gradation test shall be performed per 25,000 tons (metric) of each size of riprap placed, but not less than one test shall be performed. The gradation tests shall be reported using the forms, GRADATION TEST DATA SHEET and ENG FORM 4794-R, attached at end of this section. The Contractor shall designate on the test form that portion in tons (metric) of the lot tested which is applicable to this contract. Any deviation from the reported tonnage shall be corrected and recorded on a revised GRADATION TEST DATA SHEET. The sample shall consist of not less than 15 tons (metric) of ~~M90 and~~ M40 riprap, and shall be collected in a random manner which will provide a sample which accurately reflects the actual gradation arriving at the jobsite. Failure of the test on the initial sample and on an additional sample will be considered cause for rejection of the quarry and/or quarry process, and all riprap represented by the failed tests shall be set aside and not incorporated into the work. Any additional tests required because of the failure of an initial test sample will not be considered as one of the other required tests. If collected by the truckload, each truckload shall be representative of the gradation requirements. The Contracting Officer may direct additional testing of the riprap at the project site if the riprap appears by visual inspection, to be out of gradation. The Contracting Officer may direct this testing under the Contract Clause INSPECTION OF CONSTRUCTION. The Contractor shall provide all necessary screens, scales and other equipment, the operating personnel, and shall grade the sample. Certification and test results shall represent riprap shipped from the quarry. Certification and tests results must be received by the Contracting Officer at the jobsite before the riprap is used in the work.

2.2.4 Riprap Stockpile

Temporary storage of riprap at the worksite is not to be confused with off-site stockpiling of riprap. If the Contractor elects to provide off-site stockpiling areas, the Contracting Officer shall be notified by the Contractor of all such areas.

2.2.5 Worksite Stockpile

Riprap delivered to the work sites, which requires temporary storage landward of top bank, shall be placed in a container suitable for storing the riprap without waste, or a sand-clay-gravel pad may be constructed for the storage area and removed upon completion of the work. If the sand-clay-gravel pad method is used, the pad shall have a minimum thickness of at least 150 mm. The container or sand-clay-gravel pad method shall be subject to approval prior to delivery of the riprap. Upon completion of the work, the storage areas shall be cleaned of all storage residues and returned to their natural condition. Temporary storage of riprap at the worksite will be allowed, provided the stream-side toe of the riprap be no closer than 20 m from the closest edge of the stream's top bank, and the amount shall not exceed 200 tons (metric). The Contractor's jobsite stockpile shall be a maximum of 3.6 m high and formed by a series of layers of truckload dumps, where the rock essentially remains where it is placed. Subsequent layers shall be started 3 m from the edge of the previous layer so that the rock will not roll down the edges of the previous layers. The first layer shall be a maximum of 2 m high. Any riprap which has become contaminated with soil, dirt, or refuse after being stockpiled, will not be put into the work unless the contaminating material has been removed from the riprap prior to placement.

2.2.6 Off-site Stockpile

The Contractor's off-site riprap stockpile shall be a maximum of 3.6 m high and formed by a series of layers of truckload dumps, where the rock essentially remains where it is placed. Subsequent layers shall be started 3 m from the edge of the previous layer so that the rock will not roll down the edges of the previous layers. The first layer shall be a maximum of 2 m high. Any riprap which has become contaminated with soil, dirt, or refuse after being stockpiled, will not be put into the work unless the contaminating material has been removed from the riprap prior to placement. In areas where riprap is stockpiled for placement, the area shall have excess rock removed prior to completion of work. All rock and spalls greater than 75 mm in diameter shall be removed. Where rocks may have become buried due to soft ground or operation of the equipment, the rock shall be disposed of as directed. After the rock has been removed, the storage area shall be graded, dressed, and filled to return the ground surface as near as practical to the condition that existed prior to construction.

PART 3 EXECUTION

3.1 BASE PREPARATION

Areas on which engineering fabric, filter stone and riprap are to be placed shall be graded and/or dressed to conform to cross sections shown on the contract drawings within an allowable tolerance of plus 50 mm and minus 100 mm from the theoretical slope lines and grades. The prepared base shall be approved by the Contracting Officer. Where such areas are below the allowable minus tolerance limit they shall be brought to grade by fill with earth similar to the adjacent material and then compacted to a density equal to the adjacent in place material. Immediately prior to placing the engineering fabric, the prepared base will be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

3.2 PLACEMENT OF FILTER LAYERS

3.2.1 General

Filter layers, composed of engineering fabric and filter stone, shall be placed on the prepared base as described below, in accordance with the details shown on the contract drawings, and within the limits either shown on the contract drawings or staked in the field, to form a backing for the stone protection.

3.2.2 Engineering Fabric

Installation of engineering fabric shall be as specified in Section 02213 ENGINEERING FABRIC.

3.3 PLACEMENT OF RIPRAP

3.3.1 General

Riprap shall be placed on the filter layers specified in paragraph FILTER MATERIAL within the limits shown on the drawings.

3.3.2 Placement

Riprap shall be placed in such manner as to produce a reasonably well

graded mass of rock with the minimum practicable percentage of voids, and shall be constructed within the specified tolerance to the lines and grades shown on the drawings. A tolerance of plus 100 mm or minus 50 mm from the slope lines and grades shown on the drawings will be allowed in the finished surface of the riprap, except that either extreme of such tolerance shall not be continuous over an area greater than 18 square meters. The average tolerance of the entire job shall have no more than 50 percent of the tolerance specified above. No stone shall be dropped through air from a height greater than 1 m and stones heavier than 225 kg shall not be dropped from a height greater than 600 mm. The larger stones shall be well distributed and the entire mass of stones in their final position shall be roughly graded to conform to the gradation specified in paragraph RIPRAP, subparagraph GENERAL. The finished riprap shall be free from objectionable pockets of small stones and clusters of larger stones. Placing riprap in layers will not be permitted. Placing riprap by dumping into chutes or by similar methods likely to cause segregation of the various sizes will not be permitted. Placing riprap by dumping it at the top of the slope and pushing it down the slope will not be permitted. No equipment shall be operated directly on the completed stone protection system. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during final placing, or by other methods of placement which will produce the specified results. All dump trucks used in placing the riprap shall be equipped with bottom hinged tailgates. The gate releasing mechanism shall be arranged so that it may be operated only from, at, or near the front of the truck. Rearranging of individual stones will be required to the extent necessary to obtain a reasonably well-graded distribution of stone sizes as specified above. The Contractor shall maintain the stone protection until accepted by the Contracting Officer and any material displaced by any cause shall be replaced at his expense to the lines and grades shown on the drawings.

3.4 TESTS

3.4.1 General

The Contractor shall perform gradation tests to assure compliance with contract requirements and shall maintain detailed records.

3.4.2 Reporting

Reporting shall be in accordance with paragraph GRADATION TEST.

3.4.3 Standard Test Method for Gradation of Riprap and Graded Stone

- a. Select a representative sample (Note No. 1), weigh and dump on hard stand.
- b. Select specific sizes (see example) on which to run "individual weight larger than" test. (See Note No. 2). Procedure is similar to the standard aggregate gradation test for "individual weight retained".
- c. Determine the largest size stone in the sample. (100 percent size)
- d. Separate by "size larger than" the selected weights, starting with the larger sizes. Use reference stones, with identified weights, for visual comparison in separating the obviously "larger than" stones. Stones that appear close to the specific weight must be individually weighed to determine size grouping. Weight each size group, either

individually or cumulatively.

e. Paragraph d above will result in "individual weight retained" figures. Calculate individual percent retained (heavier than) cumulative percent retained and cumulative percent passing (lighter than). Plot percent passing, along with the specification curve on ENG Form 4794-R.

NOTE NO. 1: Sample Selection: The most important part of the test and the least precise is the selection of a representative sample. No "standard" can be devised; larger quarry run stone is best sampled at the shot or stockpile by given direction to the loader; small graded stone is best sampled by random selection from the transporting vehicles. If possible, all parties should take part in the sample selection, and agree before the sample is run, that the sample is representative.

NOTE NO. 2: Selection of Size for Separation: It is quite possible and accurate to run a gradation using any convenient sizes for the separation, without reference to the specifications. After the test is plotted on a curve, then the gradation limits may be plotted. Overlapping gradations with this method are no problem. It is usually more convenient, however, to select points from the gradation limits, such as the minimum 50 percent size, the minimum 15 percent size, and one or two others, as separation points.

F O R

E X A M P L E

O N L Y

**EXAMPLE GRADATION
SPECIFICATIONS**

| STONE WEIGHT IN KG | PERCENT LIGHTER BY WEIGHT |
|---------------------------|----------------------------------|
| 180-75 | 100 |
| 75-35 | 50 |
| 35-15 | 15 |

EXAMPLE WORKSHEET

| STONE SIZE KG | INDIVIDUAL WT. RETAINED | INDIVIDUAL PERCENT RETAINED | CUMULATIVE PERCENT RETAINED | PERCENT PASSING |
|------------------|----------------------------|--------------------------------|--------------------------------|--------------------|
| 180 | 0 | 0 | 0 | 100 |
| 75 | 4,354 | 30 | 30 | 70 |
| 35 | 5,080 | 35 | 65 | 35 |
| 15 | 3,629 | 25 | 90 | 10 |
| -15 | 1,451 | 10 | 100 | - |
| | <hr/> | | | |
| | TOTAL | 14,514 kg | | |

NOTE: Largest stone 114 kg

-- End of Section --