

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE	PAGE 1 OF 1 PAGES
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 01/02/02	4. REQUISITION/PURCHASE REQ. NO. W807PM-1289-6095	5. PROJECT NO. (If applicable)	
6. ISSUED BY VBURG CONSOL CONTRACTING OFC 4155 CLAY STREET VICKSBURG, MS 39180-3435	CODE B4P0000	7. ADMINISTERED BY (If other than Item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(√)	9A. AMENDMENT OF SOLICITATION NO. DACW38-02-B-0003
			×	9B. DATED (SEE ITEM 11) 04 Dec 2001
				10A. MODIFICATION OF CONTRACTS/ORDER NO.
				10B. DATED (SEE ITEM 13)
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 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)

**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  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.)

Reference Invitation for Bid No. DACW38-02-B-0003 for Yalobusha Watershed, Cane Creek, FC/MR&T, Yazoo Basin, Calhoun County, Mississippi, Demonstration Erosion Control (DEC), Bank Stabilization, (BS-00-02), scheduled to open January 10, 2002 is amended as shown:

**BID OPENING DATE:** Bid Opening Date is changed to 17 Jan 2002 at 1400 hours.

**BIDDING SCHEDULE:** Replace Bidding Schedule with the attached revised Bidding Schedule.

**SPECIFICATIONS:** Replace the sections with the attached revised sections. Section 2110, 2111, 2543, 2952.

**PLANS:** Make pen and ink changes on Sheet C-RP-02 on the Ramp Detail to read .15 Meters where the text says "6 Inches".

**NOTE:** These specifications were revised on <http://www.mvk.usace.army.mil/contract> on 19 Dec 01. Specs downloaded prior to 19 Dec 01, are incorrect.

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)	

SECTION 00010 Solicitation Contract Form

**FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, YAZOO BASIN  
CALHOUN COUNTY, MISSISSIPPI, DEMONSTRATION EROSION CONTROL  
(DEC), BANK STABILIZATION, YALOBUSHA WATERSHED, CANE CREEK  
(BS-00-02)**

**BIDDING SCHEDULE**

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	MOBILIZATION AND DEMOBILIZATION	1.00	Lump Sum	FOR	\$ _____
0002	CLEARING AND GRUBBING	1.00	Lump Sum	FOR	\$ _____
0003	EXCAVATION AND BACKFILL FOR DIKES AND/OR TIEBACKS				
0003AA	FIRST 16 DIKES AND/OR TIEBACKS	16.00	Each	\$ _____	\$ _____
*0003AB	OVER 16 DIKES AND /OR TIEBACKS	12.00	Each	\$ _____	\$ _____*
0004	GRADED STONE-M90				
0004AA	FIRST 3,700 TONS (METRIC)	3,700.00	TN	\$ _____	\$ _____
0004AB	OVER 3,700 TONS (METRIC)	2,465.00	TN	\$ _____	\$ _____
0005	EROSION CONTROL	1.00	Lump Sum	FOR	\$ _____
0006	WILLOW PLANTING	1.00	Lump Sum	FOR	\$ _____
*0007	STONE FOR RAMP	1.00	Lump Sum	FOR	\$ _____*
TOTAL					\$ _____

SEE NOTES ON FOLLOWING PAGE.

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SECTION 02110

GENERAL SITEWORK

PART 1 GENERAL

1.1 SCOPE

These specifications provide for furnishing all equipment, labor, and materials and performing all work in strict accordance with the specifications, drawings, and schedules for all clearing, grubbing, debris removal, excavation, backfilling, and grading, erosion control and all other incidental work in connection with the construction of longitudinal peaked stone dikes, stone tiebacks and transverse stone dikes at the location on the banks of Cane Creek in Calhoun County, Mississippi, within a relatively short construction period. The work covered by these specifications requires steady and uninterrupted progress during construction. The Contractor shall diligently prosecute the work and provide the necessary equipment, skilled and experienced crew, and a regular and well-balanced supply of materials to insure uniform and continuous progress once construction has been started.

1.1.1 Suspension of Work

Except as provided in paragraph STAGE LIMITATIONS and Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK, the Contractor will not be permitted to suspend work without a request to suspend work or remove equipment from the location of work after the work has been started under this contract without prior approval of the Contracting Officer.

1.1.2 Excavation of Ramps

Excavating ramps through top bank will not be permitted within 8 meters of the limits of any stabilization work or existing bridges, roads, or houses. Unless otherwise directed, upon completion of construction, all ramps shall be restored to the original bank condition and provided with necessary treatment for erosion control.

1.1.3 Start and Completion of Work

The Contractor shall start and complete the work as specified in paragraph CONSTRUCTION SEQUENCE unless a request to change the construction sequence has been approved by the Contracting Officer.

1.1.4 Work to be Performed

The work to be performed is indicated on the drawings and includes the following types of work:

- a. Clearing, grubbing, clearing and snagging, debris removal, excavation, and backfilling.
- b. Ramp construction.
- c. Constructing longitudinal peaked stone dikes.

- d. Constructing stone tiebacks and/or transverse stone dikes.
- e. Erosion control and willow planting.
- f. Restoration of worksite and haul roads.

## 1.2 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-08 Statements

Request to suspend work or remove equipment from the location of work; GA.

Request to change the construction sequence; GA.

## 1.3 STAGE LIMITATIONS

### 1.3.1 High Water Stages

Because of the "flashy" nature of Cane Creek, high water stages can be expected to occur intermittently depending on basin rainfall. Interruptions and/or delays to construction may occur when high water stages and/or velocities make construction operations impracticable. The Contracting Officer reserves the right to delay operations whenever, in his opinion, high water stages and/or velocities make construction operations impracticable.

### 1.3.2 Extension of Contract Period Time

As provided in Contract Clause entitled, DEFAULT, the time stated for completion of the work will be extended to such extent that the work is delayed due to high water stages and/or velocities. If part of the work is delayed or interrupted by high water stages and/or velocities, the time stated for completion will be extended to such extent as final completion of all work is delayed as a result of the partial delay or interruption. The Contractor is responsible for any additional costs which may occur during or as a result of excusable delays due to those extensions or interruptions.

## 1.4 CONSTRUCTION SEQUENCE

Unless otherwise authorized, the sequence of operations listed below shall be followed for the bank stabilization work:

- a. All construction shall begin at the upstream end of the job and proceed to the downstream end of the job as directed by the Contracting Officer.
- b. Debris removal, clearing, clearing and snagging and grubbing.
- c. Ramp construction.
- d. Construction of longitudinal peaked stone dikes.

e. Perform the excavation and backfill for dikes and/or tiebacks and other incidental excavation.

f. Construction of the stone tiebacks and transverse stone dikes shall follow the excavation as closely as practicable. No more than six (6) excavations ahead of stone placement shall be permitted, unless approved by the Contracting Officer.

g. Erosion control and willow planting shall follow, as closely as practicable, completion of all other work in the area to receive erosion control and willow planting.

h. The contractor must request in writing and receive approval to deviate from the required construction sequence.

#### 1.5 EXISTING STRUCTURES

No structures, power poles, telephone poles, overhead telephone and power lines that are within the limits of the work will be relocated and the Contractor will be required to work around those items except the items, if any, that are specified in Section 01000 GENERAL CONTRACT REQUIREMENTS paragraph, PUBLIC UTILITIES. (See Contract Clause entitled, ACCIDENT PREVENTION.)

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

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SECTION 02111

CLEARING, GRUBBING, DEBRIS REMOVAL, AND EARTHWORK

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

1.1.1 Clearing

No measurement will be made for clearing. Payment for clearing covered herein shall be included in the contract job price for "Clearing and Grubbing" and payment thereof shall constitute full compensation for furnishing all plant, labor, materials, and performing all work as required.

1.1.2 Grubbing, Snagging, Clearing and Snagging, and Debris Removal

No measurement will be made for grubbing, snagging, and debris removal. Payment for grubbing, snagging, and debris removal covered herein shall be included in the contract job price for "Clearing and Grubbing" and payment thereof shall constitute full compensation for furnishing all plant, labor, materials, and performing all work as required.

1.1.3 Excavation

No separate measurement or payment will be made for excavation. Excavation, including borrow excavation, disposal of excess materials and all costs incidental thereto shall be included in the contract unit price per each for "Excavation and Backfill for Dikes and/or Tiebacks."

1.1.4 Excavation and Backfill for Dikes and/or Tiebacks

No measurement will be made for excavation and backfill for dikes and/or tiebacks including excavating or placing streambed sand and/or gravel used in filling the voids in the stone or for filling holes in the creek. Payment for excavation and backfill for dikes and/or tiebacks will be made at the contract unit price per each for "Excavation and Backfill for Dikes and/or Tiebacks" which price and payment shall constitute full compensation for furnishing all plant, labor, inspection, materials, and equipment required to perform the excavation and backfill for all dikes and/or tiebacks and all operations incidental thereto.

1.1.5 Ramp Construction

No separate measurement or payment will be made for ramp construction. Payment for ramp construction, and all costs incidental thereto, shall be included in the contract unit price per each "Excavation and Backfill for Dikes and/or Tiebacks."

1.2 QUALITY CONTROL

The Contractor shall establish and maintain quality control for clearing, grubbing, clearing and snagging, debris removal, and earthwork to assure compliance with contract requirements and maintain detailed records of his quality control for all construction operations including, but not limited to, the following:

- a. Clearing limited to minimum required for construction operations.
- b. Removal and disposal of debris and materials of value from clearing and grubbing operations.
- c. Clearing and snagging areas specified on the drawings.
- d. Excavation performed to limits and tolerances indicated on the drawings and disposal of excess material.
- e. Backfill performed as specified.

### 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-08 Statements

Request to clear right-of-way or storage areas; GA.

Location of the disposal area outside of the right-of-way; GA.

Request to vary depth of borrow; GA.

## PART 2 PRODUCTS

### 2.1 STREAMBED SAND AND/OR GRAVEL

Sources of streambed sand and/or gravel used in the backfill may be obtained from the streambed within the right-of-way limits shown on the drawings or from any other source provided by the Contractor and approved by the Contracting Officer.

### 2.2 BACKFILL MATERIAL

Backfill material shall be streambed sand and/or gravel as defined in paragraph BACKFILL, PLACEMENT AND COMPACTION. Backfill material shall be obtained in the work reaches within the rights-of-way limits of the site as shown on the drawings. Backfill materials shall not be transferred between sites. See paragraph BORROW EXCAVATION, for borrow excavation requirements. Any other source of backfill material proposed by the Contractor is subject to the approval of the Contracting Officer. If, in the opinion of the Contracting Officer, sufficient suitable materials are not available for backfill at the site, the Contractor will provide the materials from a suitable source and an equitable adjustment will be made under the Contract Clause CHANGES.

### 2.3 RAMP SLOPE PAVING

Ramp "side slope" paving shall be of the "M90" designation stone, as defined in Section 02543, para. 2.1.1 GENERAL. Ramp "slope" shall be paved with a 0.15 Meter thickness of crushed stone.

## PART 3 EXECUTION

### 3.1 CLEARING

The streambank shall be cleared of all trees, brush, drift, car bodies, miscellaneous debris, or other obstruction that would hinder excavation or grading, and subsequent construction operations. Clearing shall be limited to the absolute minimum necessary for construction of the work. Any materials of value removed shall be stockpiled behind top bank as directed by the Contracting Officer. Care shall be taken by the Contractor not to cut or injure any trees which do not unreasonably interfere with the construction. It is the intent of these specifications that growth around the work area be preserved to the maximum extent practicable. Request to clear right-of-way or storage areas shall be submitted for approval and will be limited to approved areas. All trees and brush within the areas authorized to be cleared shall be felled and, together with drift, and other debris, shall be disposed of as directed in paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIALS AND OTHER DEBRIS.

### 3.2 GRUBBING, SNAGGING, AND DEBRIS REMOVAL

#### 3.2.1 Grubbing

All stumps exposed during excavation or grading operations shall be either cut off flush with the finished slope grade or grubbed out and disposed of as directed in paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIALS AND OTHER DEBRIS.

#### 3.2.2 Snagging

Prior to placing stone, all snags, stumps, or other obstructions shall be removed from the area to be covered by the stone and disposed of as directed in paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIALS AND OTHER DEBRIS.

#### 3.2.3 Clearing and Snagging

Where indicated on the drawings and as directed by the Contracting Officer, log jams and/or trees are to be removed from the stream. These log jams and/or trees shall be disposed of outside the rights-of-way at a disposal area provided by the Contractor and as approved by the Contracting Officer. The disposal area shall also be located as specified in paragraph DISPOSAL OF CLEARED AND GRUBBED MATERIALS AND OTHER DEBRIS.

### 3.3 DISPOSAL OF CLEARED AND GRUBBED MATERIALS AND OTHER DEBRIS

All debris resulting from construction operations shall be disposed of and removed from the site with the location of the disposal area outside of the right-of-way and obtained by the Contractor at no expense to the Government in accordance with Section 01000 RIGHTS-OF-WAY. The Contractor shall make a reasonable effort to channel materials of value resulting from clearing operations into beneficial use. Disposal of debris resulting from construction operations shall comply with all Federal, State and local laws. The Contractor may, at his option, retain for his own use or disposal by sale or otherwise any such materials of value. The Government assumes no responsibility for the protection or safekeeping of any materials retained by the Contractor. Such material shall be removed from the site of the work before the date of completion of the work under these specifications.

### 3.4 EXCAVATION FOR STONE

Where indicated on the drawings, the natural ground shall be excavated to provide for placement of stone. The finished grade shall conform to the prescribed grade within the limits of plus or minus 150 mm, and shall present a neat, smooth surface, free from all obstructions.

### 3.5 RAMP CONSTRUCTION

Where indicated on the drawings, the natural ground shall be excavated to provide for ramp construction. The ramp slope is to be paved with crushed stone and the ramp side slopes are to be paved with the "M90" stone. The finish grade shall conform to the prescribed grade within the limits of plus or minus 150 mm for the "M90" stone and plus or minus 50 mm for the crushed stone, and shall present a neat smooth surface, free from all obstructions.

### 3.6 BORROW EXCAVATION

The Contractor shall use suitable material obtained from the streambed within the rights-of-way for backfill as specified in paragraph BACKFILL MATERIAL and BACKFILL, PLACEMENT AND COMPACTION. The Contracting Officer reserves the right at all times to specify the area(s) from which materials shall be procured, and approve any request to vary depth of borrow excavation.

### 3.7 BACKFILL, PLACEMENT AND COMPACTION

Those portions of dikes and tiebacks which are landward of high top bank shall be backfilled as shown on the drawings. The backfill shall be accomplished by placing streambed sand and/or gravel over the stone landward of high top bank, applying a sufficient quantity of water to disperse this material into the voids in the stone, leaving a minimum thickness of 150 mm of sand and/or gravel over the stone, then completing the backfill using material obtained from excavation for the dikes and tiebacks. Backfill material which contains 25 percent or more of material finer than sand shall be placed in layers not to exceed 600 mm in thickness, and each layer shall be compacted by one complete pass of a bulldozer weighing not less than 9100 kilograms and exerting a tread pressure of not less than 42 kPa. Sand is defined as material passing a No. 4 sieve and retained on a No. 200 sieve. Backfill composed of sand and/or gravel may be placed in lifts of any thickness, and no special compaction will be required. The backfill shall be sloped to drain landward and graded to a smooth surface transition into the surrounding surfaces. Backfill required to fill holes in the creek shall be composed of existing streambed sand and/or gravel. This backfill is necessary to support longitudinal peaked stone dikes when the placement of the stone passes over such holes.

### 3.8 DISPOSAL OF EXCAVATED MATERIAL

Excess excavated material, not used in the work, shall be disposed of outside the rights-of-way at a disposal area provided by the Contractor and as approved by the Contracting Officer and in accordance with Section 01000 RIGHTS-OF-WAY. The disposal area must be an upland disposal area and shall not be located in any river, stream, lake or wetland area.

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SECTION 02543

STONE

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 1993) Specific Gravity and Absorption of Coarse Aggregate

ASTM C 295 (1990) Petrographic Examination of Aggregates for Concrete

CORPS OF ENGINEERS (COE)

COE CRD-C 144 (1973) Testing Stone for Resistance to Freezing and Thawing

COE CRD-C 169 (1993) Resistance of Rock to Wetting and Drying

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST HB 44 (1995) NIST Handbook 44: Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices

1.2 MEASUREMENT AND PAYMENT

1.2.1 Measurement

Stone will be measured for payment by the ton (metric) as determined by the truckload on approved scales meeting the requirements of paragraph TRUCKLOAD. Crushed stone for ramp construction will not be measured for payment.

1.2.1.1 Truckload

Each truck load shall be weighed by the Contractor to the nearest 0.1 ton (metric) and the final quantity rounded to the nearest whole ton. Stone shall be measured for payment by being weighed on approved scales before being placed in the work. The Contractor shall furnish the scales and shall weigh the stone in the presence of the Contracting Officer, who will read and record the weights thereof. Scales shall be of sufficient length to permit simultaneous weighing of all axle loads and shall be inspected, tested and sealed as directed by the Contracting Officer to assure an accuracy within 0.5 percent throughout the range of the scales. The scales

accuracy shall conform to the applicable requirements of NIST HB 44 and shall be certified as to accuracy by an acceptable scales company representative prior to weighing any stone. The scales shall be located at the site of work. If commercial scales are readily available in close proximity (within 16 km) of site of work, the Contracting Officer may approve the use of the scales. The Contracting Officer may elect to accept certified weight certificates furnished by a public weighmaster in lieu of scale weights at the jobsite. Quarry weights will not be accepted. Scales shall be checked and certified before hauling stone and rechecked and recertified whenever a variance is suspected and after each 50,000 tons increment of stone weighed under this contract.

#### 1.2.2 Stockpiled Stone

If the Contractor elects to stockpile stone, he shall weigh the stone immediately before placement by the method described above. Stone placed in temporary onsite storage will not be required to be reweighed prior to placement.

#### 1.2.3 Payment

Payment for stone satisfactorily placed in constructing the longitudinal peaked stone dikes, transverse stone dikes and stone tiebacks will be made at the applicable contract unit price for "Graded Stone-M90," which price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and placing the stone in the work as specified. Deductions from payment in an amount considered equitable by the Contracting Officer will be made if the stone is contaminated with soil, dirt, or refuse. No separate payment will be made for the stockpiling of stone and all cost in connection therewith shall be included in the applicable contract unit price for stone. Payment for Graded Stone M-90 and crushed stone used in ramp construction will be made at the applicable job price for Ramp on the bid schedule, which price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and placing the stone in the work as specified.

### 1.3 GOVERNMENT TESTING AND STUDIES

#### 1.3.1 Stone

##### 1.3.1.1 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.

##### 1.3.1.2 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.

#### 1.4 SUBMITTALS

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

SD-13 Certificates

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 STONE

2.1.1 General

Only quarried stone shall be used. Stone 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 stone 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 STONE "M90")

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

2.1.2 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.

#### 2.1.3 Gradation Test

The Contractor shall perform a gradation test or tests on the stone 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 stone shipped complies with the specifications. At least one gradation test shall be performed per 50,000 tons (metric) of each size of stone 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 stone, 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 stone 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 stone at the project site if the stone 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 stone shipped from the quarry. Certification and tests results must be received by the Contracting Officer at the jobsite before the stone is used in the work.

#### 2.1.4 Stone Stockpile

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

#### 2.1.5 Worksite Stockpile

Stone delivered to the work sites, which requires temporary storage landward of top bank, shall be placed in a container suitable for storing the stone 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 stone. Upon completion of the work, the storage areas shall be cleaned of all storage residues and returned to their natural condition. Temporary storage of stone at the worksite will be allowed, provided the stream-side toe of the stone be no closer than 18 m from the closest edge of the stream's top bank, and the amount shall not exceed 200 tons (metric) unless otherwise approved. 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 stone 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 stone prior to placement. No stone shall be stored in the creek bottom.

#### 2.1.6 Off-site Stockpile

The Contractor's off-site stone 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 stone 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 stone prior to placement. In areas where stone 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.

#### 2.2 CRUSHED LIMESTONE

Crushed limestone material shall be from a source approved by the Contracting Officer and shall conform to the following gradations:

SIEVE SIZES	PERCENTAGE BY WEIGHT PASSING (AASHTO T 27)
37.5 mm	100
19.0 mm	50 - 95
12.5 mm	42 - 85
4.75 mm	25 - 65
425 micrometer	10 - 32
75 micrometer	3 - 12

The fraction of the material passing the 425 micrometer sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6.

The coarse aggregate shall have a percentage of wear not to exceed 50 after 500 revolutions of testing via the Los Angeles Testing Machine in

accordance with AASHTO T 96. If material from the source has previously met this wear test, it need not be repeated.

#### 2.2.1 EQUIPMENT

The crushed limestone shall be delivered in vehicles approved by the Contracting Officer. Vehicles for this purpose may be of any size or type, provided the body is of such shape that the actual delivered contents may be readily and accurately determined and will remain constant. Unless all approved vehicles on the work area are of uniform capacity, each vehicle shall bear a plainly legible identification mark indicating its specific approved capacity. All vehicles shall be loaded to a sufficient level to ensure water level loads when the vehicles arrive at the point of delivery. Each vehicle shall bear a plainly legible identification mark.

#### 2.2.2 PLACING NEW SURFACING MATERIAL

A surfacing course of new crushed limestone material shall be placed and spread uniformly on the ramp. The Contractor shall not dump any load until it has been inspected and measured by an authorized Government representative. The new surfacing shall be placed in one 150 mm (6 inch) loose measure layer of crushed limestone at the widths shown on the drawings. The surfacing shall not be placed on a wet surface. The surface course shall be compacted as evenly and densely as practicable by the controlled movement of the hauling equipment over the entire area. After the new surfacing material has been placed and compacted, it shall be dressed with a motor grader or similar equipment to present a uniform appearance and a smooth riding surface, without sharp breaks or depressions which will collect or hold water. Any damage to the finished surfacing caused by the Contractor's hauling operations or other construction operations shall be repaired at the Contractor's expense by adding crushed limestone surfacing material, compacting, and blading as necessary to obtain the required ramp section.

### PART 3 EXECUTION

#### 3.1 STONE PLACEMENT

The stone shall be placed in the longitudinal peaked stone dikes, stone tiebacks, transverse stone dikes, and the paved ramp by skip, grapple, hand, or other approved method, in such a manner as to produce a reasonably well graded mass of stone with the minimum practicable percentage of voids. The crown of the ramp shall be bladed and shaped prior to the placement of the crushed stone surfacing. Stone shall not be dropped from a height greater than 1 meter. A variation of 300 mm above or 150 mm below the specified deviation and 150 mm under or 300 mm over the specified crown width will be allowed provided these variations are gradual over a minimum distance of 3 meters measured along the dike's centerline. Bulldozing stone into excavated trenches will not be permitted. Stone delivered on-site shall be contained as specified in paragraph STONE.

#### 3.2 TESTS

##### 3.2.1 General

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

### 3.2.2 Reporting

Reporting shall be in accordance with paragraph GRADATION TEST.

### 3.2.3 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.

### 3.2.4 Testing of Crushed Stone

The Contractor shall determine the percentage of wear, gradation, liquid limit, plasticity index, and sieve analyses of the new crushed stone surfacing material. As a minimum for each quarry, the surfacing material shall be tested once before beginning placement. After placement begins, samples for tests shall be taken from material that has been delivered to the job site. The on-site Government representative shall be notified when a sample is to be taken for each test and be given the opportunity to witness the taking of each sample. The Contracting Officer may direct additional testing under the Contract Clause INSPECTION OF CONSTRUCTION if the material appears by visual inspection to not meet the specifications.

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 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	-

TOTAL 14,514 kg

NOTE: Largest stone 114 kg

--End of Section--

**STONE SOURCES**

LAT/LONG (TESTED)	QUARRY LOCATION, ADDRESS AND TELEPHONE NUMBER	MAIN OFFICE ADDRESS AND TELEPHONE NUMBER
<u><b>ALABAMA</b></u>		
34/88 (1995)	Allsboro Quarry - 8 miles east of intersection of MS Hwy 25 and Tishomingo County Rd 957 at Midway, MS, just across AL state line.  Hoover Incorporated P.O. Box 613 Iuka, MS 38852 (256) 360-2400 (800) 535-2636	Hoover Incorporated 1205 Bridgestone Parkway P.O. Box 1700 LaVergne, TN 37086-1700 (615) 793-2600
34/87 (1999)	Pride Quarry, 18055 Hwy 72 West, Tuscumbia, Alabama	Southern Ready Mix 18055 Hwy 72 Tuscumbia, AL 35674 (256) 381-0012
34/87 (1995)	Cherokee Quarry - 3 miles east of Cherokee, AL on old Hwy 72.	VULCAN Materials Co. P.O. Box 459 Cherokee, AL 35616 (205) 359-6404
<u><b>ARKANSAS</b></u>		
34/92 (1997)	Granite Mountain Quarry #1 is located on east side of Hwy 65 and just north of Dixie Road.  Granite Mountain Quarries P.O.Box 138 Sweet Home, Ar 72164 (501) 490-1535	McGeorge Corporation P.O. Box 138 Sweet Home, AR 72164 (501) 490-1535
34/95 Gravel (1996)	River Mountain Quarry - Approx. 5 miles northwest of Delaware, AR, at Arkansas River Mile 218.5  Pine Bluff Sand & Gravel P.O. Box 96 Delaware, AR 72835-0096 (501) 938-7018	Pine Bluff Sand and  P.O. Box 7008 Pine Bluff, AR 71611-7008 (870) 534-7120 (800) 850-2300
36/91 (1995)	Verkler Quarry- Approx. 4 miles north of Black Rock, AR on U.S. Hwy. 72	VULCAN Materials Co. P.O. Box 276 Black Rock, AR 72415 (870) 878-6245

**STONE SOURCES**

(Continued)

LAT/LONG (TESTED)	QUARRY LOCATION, ADDRESS AND TELEPHONE NUMBER	MAIN OFFICE ADDRESS AND TELEPHONE NUMBER
<b><u>KENTUCKY</u></b>		
37/87 (1996)	Cedar Bluff Quarry - 3 miles south of Princeton, KY on KY Hwy. 91 (Formerly Kentucky Stone Co.)	Hanson Aggregates 10234 Hopkinsville Rd. Princeton, KY 42445 (270) 365-6881
37/88 Aggregates (1996) Rd	Three Rivers Quarry - 7 miles northeast of Smithland, KY, off Hwy 60 (Cumberland Road)	Martin Marietta 830 Three Rivers Quarry Smithland, KY 42081 (270) 928-2141
37/88 (1996)	Gilbertsville Quarry - On U.S. Hwy 62, "Between the Dams," Lake City, KY.	VULCAN Materials Co. Reed Quarry 947 U.S. Hwy. 62 Grand Rivers, KY 42045 (270) 362-4265
<b><u>MISSOURI</u></b>		
38/90 (1997)	Old Menefee Quarry- Take I-55 4 miles north of Bloomsdale, MO and take exit for State Rds. DD and OO and turn east and go 1 mile to Hwy 61 and continue straight thru intersection on Brickeys Rd.	Brickeys Stone LLC 13588 Brickeys Rd. Bloomsdale, MO 63627 (573) 483-3475
37/89 (1995)	Gray's Point Quarry - MRM 46.2, above the mouth of the Ohio River  Tower Rock Stone Co. P.O. Box 4248 Scott City, MO 63780 (573) 264-3800	Tower Rock Stone Co. P.O. Box 50 Columbia, IL 62236 (618) 281-4106
38/90 (1995)	Bussen Quarry - 5 miles north of St. Genevieve, MO, MRM 127.6, above the mouth of the Ohio River  Tower Rock Stone Co. P.O. Box 111 St. Genevieve, MO 63670 (573) 883-7415	Tower Rock Stone Co. P.O. Box 50 Columbia, IL 62236 (618) 281-4106



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SECTION 02952

EROSION CONTROL AND WILLOW PLANTING

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

1.1.1 Measurement

a. Erosion Control

No measurement will be made for erosion control.

b. Planting Willows

No measurement will be made for planting willow sprouts.

c. Mulching

No measurement will be made for mulching.

1.1.2 Payment

a. Erosion Control

Payment for erosion control will be made at the contract job price for "Erosion Control" which price and payment shall constitute full compensation for furnishing all plant, labor, materials, equipment, and performing all operations necessary for erosion control.

b. Mulching

No separate payment will be made for mulching. All costs for mulching will be included in the contract job price for "Erosion Control."

c. Planting Willow Sprouts

Payment for planting willow sprouts will be made at the contract job price for "Willow Planting", which price and payment shall constitute full compensation for furnishing all plant, labor, materials, equipment, and performing all operations necessary for furnishing, transporting, locating, and planting willow sprouts.

## 1.2 DESCRIPTION

The work covered by this section consists of furnishing all plant, labor, materials, equipment and transportation, and performing all operations necessary for erosion control and willow planting on areas that are specified herein and/or as shown on the drawings.

## 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-13 Certificates

Fertilizer; FIO. Seed; FIO. Mulch; FIO.

Statements signed by an official authorized to certify on behalf of the manufacturer of the product, attesting that the product meets specified requirements.

## 1.4 AREAS TO RECEIVE EROSION CONTROL

All disposal areas and all disturbed areas within the construction limits except areas to receive other types of surfacing shall receive erosion control as specified herein. Croplands that are within the construction limits will not receive erosion control unless the landowner/farmer so requests and if approved by the Contracting Officer. Areas outside the construction limits or areas disturbed for field facilities or storage shall be protected as specified in paragraph EROSION CONTROL.

## 1.5 AREAS TO RECEIVE WILLOW PLANTING

Willow sprouts shall be placed as shown on the drawings. Willow sprouts shall be placed along the entire length of each longitudinal peaked stone dike including areas between stone tiebacks.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Fertilizer

Fertilizer shall be a balanced fertilizer, such as 13-13-13. The fertilizer may be delivered to the site in bags or other convenient containers or delivered in bulk. If delivered in bags or containers, the fertilizer shall be fully labeled in accordance with the applicable state fertilizer laws and shall bear the name, trade name or trademark, and warranty of the producer. The fertilizer shall meet the requirements for commercial fertilizer and shall contain a minimum of 5.60 grams of available nitrogen per square meter. Dry storage of fertilizer shall be required to retain its effectiveness.

#### 2.1.2 Seed

Seed labeled in accordance with U. S. Department of Agriculture Rules and Regulations under the Federal Seed Act shall be furnished by the

Contractor. Seed shall be furnished in sealed, standard containers unless written exception is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. All surfaces shall be seeded as follows: If seeding is done during the period 1 March through 30 September, surfaces shall be seeded by uniformly distributing a mixture of 22 kg Bahia grass, 22 kg Sericea Lespedeza, and 3.5 kg Bermuda Grass (hulled) seed per hectare over the area. If seeding is done during the period 1 October through 28 February, the seeding mixture shall consist of a uniform mixture of 10 kg of fescue and 27 kg of rye per hectare. The seed shall have a minimum purity of 90 percent and a minimum germination rate of 80 percent.

#### 2.1.3 Mulch

Grass hay shall be furnished and applied by the Contractor. Materials that contain noxious grass or weed seeds that might be detrimental to the turfing being established or to adjacent farmland will not be acceptable.

### PART 3 EXECUTION

#### 3.1 EROSION CONTROL

##### 3.1.1 Preparation

The areas to receive erosion control shall be dressed by the cutting off of high points and the filling of depressions to the extent necessary to provide a reasonably smooth surface that can be readily traveled by a farm tractor pulling a rotary type mower.

##### 3.1.2 Application

After dressing, the areas to receive erosion control shall be fertilized and seeded. Fertilizer shall be distributed uniformly at a rate of 225 kg per hectare over areas to be seeded and shall be incorporated into the soil to a depth of at least 100 mm by disking, harrowing, or other acceptable methods. After the dressing prescribed above has been completed and fertilizer incorporated, all surfaces shall be seeded at the rate specified in paragraph SEED. After the seed has been distributed the entire surface shall be compacted by two passes of a conventional tractor drawn cultipacker.

##### 3.1.3 Mulching

Mulching shall be performed immediately after seeding. The mulch shall be a vegetative mulch consisting of grass hay. Mulch shall be applied uniformly on the soil surface at the rate of 3.4 tons (metric) (approximately 150 bales) per hectare by means of approved equipment suitable for such work. The mulch shall be anchored into the soil with a mulch crimper. The mulch crimping equipment shall have straight, matched, dull blades no more than 250 mm apart. Anchoring the mulch shall be performed along the contour of the ground surface.

### 3.2 WILLOW PLANTING

Willow sprouts may be planted at any time of the year. The willows shall be 450 mm to 600 mm in length, 25 mm minimum diameter and planted within 24 hours of cutting, and stored in water from the time of cutting until planting. The willows shall be planted to a minimum depth of 305 mm (1 foot).

-- End of Section --