

## SPECIFICATIONS

## DIVISION 1 - GENERAL REQUIREMENTS

## SECTION 1.1 - GENERAL REQUIREMENTS

It is required that there be constructed and completed, in accordance with the contract provisions and clauses, these specifications, and the drawings listed in Section 6 hereof, the access roadway improvements, removal of remains of existing concrete apron, excavation to bedrock of the streambed upstream and downstream of the existing fish barrier to the limits shown on drawing number 344-330-14839, construction of additions to the existing fish barrier together with construction of a new partially steel covered concrete apron as shown on drawings 344-330-14839, 14840 and 14841.

The work is located on Tule Creek in Yavapai County approximately 97 kilometers north northwest of Phoenix, Arizona as shown on drawing 344-330-14838.

## 1.1.2 DESCRIPTION OF THE WORK

The principal components of the work to be performed under these specifications include the following:

- a. Regrade (where necessary) and maintain access road.
- b. Excavate upstream and downstream of existing fish barrier.
- c. Remove existing downstream concrete apron.
- d. Modify the existing concrete fish barrier.
- e. Construct new concrete aprons.
- f. Anchor steel plate to downstream apron.

## 1.1.3 SI METRIC SYSTEM

These specifications and drawings employ the SI (International System of Units) metric units of measurements except that, where commercial items or products are found to not be readily available in SI metric units, U.S. customary units are acceptable.

Subject to approval of the Contracting Officer, the Contractor shall furnish U.S. customary dimensioned products only when SI metric dimensioned products are not readily available.

The Contractor shall use U.S. customary units of measurement as follows:

- a. Calculations may be made in the units of the Contractor's choice. When calculations are made in U.S. customary units, the results of all principal steps and the final results shall also be expressed in SI units using the dual system of SI units followed by U.S. customary units in parentheses, e.g., 1 kilopascal (0.145 pound per square inch).
- b. Nominal sizes of commercial items manufactured to a recognized United States national standard shall be expressed in U.S. customary units of the defining standard. Nominal sizes shall not be converted to SI units.
- c. The numerical descriptions of proprietary items, such as those listed in a manufacturer's catalog, may be expressed in U.S. customary units. Unless specified otherwise, all Contractor-furnished submittals shall employ SI metric units.

The Bureau of Reclamation has available a Metric Manual which contains the SI metric standards of the Bureau of Reclamation. Use of the SI metric system for the work specified herein shall conform to the information contained in the Metric Manual. A copy of this manual can be obtained by the Contractor without charge from the Bureau of Reclamation, Attn: 2210, PO Box 9980, Phoenix AZ 85068.

Reference may also be made to ASTM E 380 (Standard for Metric Practice).

The Contractor will be allowed no additional compensation for construction in the SI metric units of measurement or for the joint use of U.S. customary-sized products with the SI metric construction. All cost associated with the use of SI metric for the work specified herein shall be included in the prices offered in the schedule for applicable items of work.

TABLE 1-A METRIC CONVERSIONS

Multiply	By	To Obtain
ft.....	304.8	mm
sq ft.....	0.0929	sq m
cu ft.....	28.3	L
ft lb (torque).....	1.36	Nm
ft lb (work).....	1.36	J
gallon.....	3.79	L
inch.....	25.4	mm
sq in.....	645	sq mm
mile.....	1.61	km
pound.....	0.454	kg
pound (force or thrust)...	4.45	N
psi.....	6.89	kPa
quart.....	0.946	L
ton (2000 lb).....	0.907	t "tonne, metric ton"
yd.....	0.914	m
sq yd.....	0.836	sq m
cu yd.....	0.765	cu m
m.....	3.281	ft
m.....	1,000	mm
m.....	1,000	km
Temperature conversion....	F = 1.8 X C + 32	
Temperature conversion....	C = (F - 32)/1.8	

mm = millimeter, m = meter, L = liter, km = kilometer, kPa = kilopascal  
 pascal = N/sq m, N = Newton, N = kg m/second squared, J = joule,  
 joule = N m, milli = 1/1,000, kilo = 1,000

## REBAR

Metric Size	English Size	Diameter inches	Diameter millimeters
10	3	0.375	9.525 11.3
15	4 5	0.5 0.625	12.7 15.8750 16.0
20	6	0.075	19.05 19.5
25	7 8	0.875 1.00	22.225 25.2 25.4
30	9	1.125	28.2575 29.9
35	10	1.27	28.575 35.7 35.814
45	14	1.693	43.002 43.7
55	18	2.257	56.4 57.3278

## 1.1.4 LAYOUT OF CONTRACTOR'S USE AREA

Within 15 days after award of contract, the Contractor shall submit, for review by the Contracting Officer, a drawing showing his proposed layout of the use area he plans to construct for operations at the site of the work. The drawings shall show the general location of such principal components and facilities as shop, storage areas including those for fuel and oil, employees' parking area, disposal of waste materials from construction operations, temporary fences, temporary access and haul roads and other uses of Government land by the Contractor, including any other information required to show the contractor's intended use of the area available.

Submittals (RSN C11) shall be in accordance with this paragraph and paragraph 1.1.6 (submittal Requirements) The Contractor shall furnish one reproducible and two prints of the drawing. One set of prints together with the Contracting Officer's comments will be returned to the Contractor.

The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.1.5 LAYOUT OF WORK AND QUANTITY SURVEY

A. Work provided by the Government. - The Government will establish lines and grades required for proper execution of the work. The Government shall also perform all layout surveys required for the control and completion of the work, and all necessary surveys to compute quantities of work performed.

The Contractor shall give such assistance and provide such drill holes, forms, ladders, spikes, nails and light as may be required by the Government in establishing lines and grades. The Contractor shall adjust his construction operations at such points and for such reasonable time as may be necessary to assist with the work of transferring lines and marking points for line and grade.

The Government will provide all survey crew services essential to orderly performance of the work, and Government survey crews will be available with 72 hours notice for the work under these specifications. The Contractor shall keep the field representative advised on a current basis of construction survey requirements so that survey work may be coordinated with the Contractor's sequence of operations.

b. Replacement of survey stakes. - Where construction operations require removal of the Government's stakes or other survey marks, the Contractor shall reference such points in an approved manner. Survey stakes or marks established by the Government shall be preserved by the Contractor unless he is authorized to remove them; and in case of their destruction or removal by the Contractor's forces, they will be replaced by the Government at the Contractor's expense. The actual cost to the Government of replacing survey stakes or marks will be deducted from payments due the Contractor.

c. Degree of accuracy. When formwork has been completed and is ready for concrete, the Government's surveyors shall check the formwork for conformance with the drawings and to ensure that the completed structure will be within the tolerance limits.

d. The cost of furnishing all necessary materials and performing all work and coordination required by the Government in establishing lines and grades and other surveys as described in this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.1.6 SUBMITTAL REQUIREMENTS

a. General. - The Contractor shall furnish all materials and perform all work required for furnishing submittals to the Government, in accordance with the clauses entitled "Specifications and Drawings for Construction" and "Administration of Specifications and Drawings for Construction",) this paragraph, Table 1-B (List of submittals), and the requirements in the provisions, clauses, and paragraphs of this solicitation.

The word "submittals" shall be interpreted to include drawings, data, manuals, certifications, test reports, curves, samples, color chips or charts, brochures, and other items furnished by the Contractor for approval, informational, or other purposes.

b. List of submittals. - Table 1-B (List of submittals) lists the submittals required by this solicitation except those submittals which are required conditionally, required by entities other than the Bureau of Reclamation, or which are periodic in nature. Any submittal required to be submitted by the

Contractor, but which is not listed in the table, shall be submitted in accordance with the applicable requirements of this solicitation. In case of a conflict between the requirements of this paragraph and the requirements included elsewhere in this solicitation the requirements elsewhere shall take precedence over the requirements contained in this paragraph.

c. Submittals. - Each item in table 1-B (List of submittals) has been assigned an RSN (Required Submittal Number). The "Submittals required" column of the table specifies the material to be submitted for each RSN. All of the material specified for an RSN will be considered a complete set; and where the material required for an RSN is specified as separate or distinguishable parts, a complete set shall include all parts. Only complete sets shall be submitted.

The number of complete sets to be submitted, and the location to which they are to be sent, shall be in accordance with the "No. of sets to be sent to:" column of the table, except as provided below for sets of original material.

When an RSN involves submittal of original (non-copied) material, all original material, or as much thereof as is necessary to form a complete set, shall be included in just one complete set. This "originals" set shall be sent to the proper address, given in subparagraph e. below, as determined by the "Responsible code" column of the table and the following:

- (1) CO indicates Contracting Officer.
- (2) CE indicates Construction Engineer.

The "originals" set shall be counted as one of the complete sets required to be submitted under the "No. of sets to be sent to:" column of the table.

For each RSN, the Contractor shall submit complete sets of required submittal material under the cover of a transmittal letter. At the Contractor's option, complete sets for more than one RSN may be submitted under cover of the same transmittal letter, provided they have the same responsible code designation as shown in the table. The Contractor's transmittal letter shall include:

- (1) Reference to Bureau of Reclamation contract/specifications numbers and title.
- (2) Identification of responsible code as shown in the table.
- (3) Complete list of RSN(s) for which material is being submitted.
- (4) For each RSN, number of complete sets and list of materials included.
- (5) For each RSN, identification of the submittal as an initial submittal or a resubmittal.

Each drawing submitted by the Contractor shall have the Contractor's or supplier's title and drawing number on it. Drawings and data shall be labeled with the Bureau of Reclamation solicitation/specifications numbers and the offering schedule item number.

Manufacturer's data for commercial products or equipment, such as catalog cut sheets, shall be clearly marked to indicate the item(s) to be furnished. The data shall be sufficiently comprehensive to identify the manufacturer's name, type, model, size, and characteristics of the product or equipment, as well as to fully demonstrate that the product or equipment meets the requirements of these specifications.

Submittals requiring certification by a registered professional shall be signed and sealed.

c. Review of submittals furnished for approval. - The time required for review of each submittal or resubmittal furnished under an RSN for approval will not begin until the Government receives complete sets of all the submittal materials required for that particular RSN. The number of calendar days required for review of drawings or data submitted or resubmitted for approval will include the date the drawings or data are received by the Government, and will extend through the date of return mailing to the Contractor.

Except as otherwise provided in the specifications for specific submittals, the Government will require (15) calendar days for review of each submittal or resubmittal furnished by the Contractor for approval, and this review time will apply to each separate submittal or resubmittal whether the submittals are approved, not approved, or returned for revision.

If the Government uses time in excess of the specified number of calendar days for review of any submittal or resubmittal, additional time, not to exceed the excess time, will be added to the time allowed the Contractor for completion of the work affected by such excess time, to the extent it is demonstrated that the excess time caused delay. If the Government's review of two or more separate submittals or resubmittals is late and results in concurrent days of excess time, such days will be counted only once in computing an extension of the completion date. Further, if the Contractor fails to make complete approval submittals in the sequence and within the time periods specified in this solicitation and thus precludes the Government from approving or considering for approval such submittals within the specified calendar day period, then the Contractor shall not be entitled to an extension of time allowed for completion of the work.

Unless otherwise specified, one set of the submittals required for approval will be returned to the Contractor either approved, not approved, or conditionally approved, and will be marked to indicate changes, if required. Submittals that are not approved or that require changes or revisions shall be revised and resubmitted for approval, and shall show changes and revisions with revision date. All requirements specified for the initial submittal shall apply to any resubmittals required. Unless otherwise specified, all submittals which are to be resubmitted shall be resubmitted by the Contractor within (10) calendar days after the Contractor has received the Government's comments.

d. Addresses. - The Contractor shall send the submittals to the applicable addresses listed below as required by table 1-B (List of submittals).

Submittals shall be sent as required by table 1-B (List of submittals) to:

- (1) Contracting Officer, Bureau of Reclamation  
Attention APO - 800  
P.O. Box 9980  
Phoenix, AZ 85068
- (2) Construction Engineer, Bureau of Reclamation  
Attention APO - 2231  
P.O. Box 9980  
Phoenix, AZ 85068

e. Cost. - Unless otherwise specified, no separate payment will be made for preparing and furnishing submittals to the Government, and the cost thereof shall be included in the prices offered in the schedule for the applicable items of work requiring the submittals or other items of work.

Table 1-B. - List of submittals

AMENDMENT NO. 1

SOLICITATION NO. 1425-4-SP-32-02430

RSN	Item	Reference provision, clause, or paragraph	Responsible code	Submittals required	No. of sets to be sent to:		Due date or delivery time
					CO	CE	
C1	Bonds	1.2.5 (WBR 1452.228- 81)	CO	Performance and Payment Bonds	1	0	Within 15 calendar days after award
C2	(Reserved)						
C3	Practicable schedule	8.4 (52.236- 15)	CE	Blackline prints	0	1	Within 5 days after work commences on the contract or another period of time as determined by the Contracting Officer
C4	Insurance - Work on a Government installation	1.2.6 (52.228-5)	CO	(1) Written certification that the required insurance has been obtained	1	0	Before commencing work under the contract
					1	0	Upon the Contracting Officer's request
C4				(2) Current certification of insurance for each subcontractor			
C5	Liability insurance	1.2.7 (1452.228- 70)	CO	Acceptable evidence showing that insurance has been obtained	1	0	Prior to commencement of work under the contract
C6	Safety	1.2.21 (1452.223- 81)	CE	Safety program	0	1	Submitted and accepted before commencing onsite work. See section 2 of the "Construction Safety Standards Handbook"
C7	Payment	1.5.7 (52.232- 28)	CE	Payment information	0	1	After award, but no later than 14 days before an invoice or contract financing request is submitted. Changes shall be furnished 30 days before effective change.

Table 1-B - List of submittals

AMENDMENT NO. 1  
SOLICITATION NO. 1425-4-SP-32-02430

RSN	Item	Reference provision, clause, or paragraph	Respon-sible code	Submittals required	No. of sets to be sent to:*		Due date or delivery time
					CO	CE	
C8	Release of claims	1.5.8 (1452.204-70)	CO	Release of claims (DI-137) against United States	1	0	After completion of work and prior to final payment
C9	Equal opportunity	1.6.12 (52.222-26)	CO	Information required by Executive Order 11246 (SF-100)	1	0	Within 30 days following the award
C10	Labor standards data	1.7.8 (52.222-11)	CO	(1) List of subcontracts  (2) Statement and Acknowledgment Form (SF-1413) for each subcontract	1	0	Within 14 days after award of contract, and within 14 days after award of any subcontract
C11	Site plan	1.1.4	CO	Proposed layout of use area.	3	0	Within 15 days after award of contract.
C12	Survey. Check points	1.1.5	CE	Accuracy check on Government control points.	0	1	10 days prior to beginning construction.
C13	Hazardous materials	1.4.2 (C-146)	CE	Material safety data sheets	0	1	Not less than 10 days prior to jobsite delivery of each hazardous material
C14	Prevention of water pollution	1.5.4 (C-182)	CE	Detailed water quality management plan	0	1	At least 20 days prior to discharge or handling of any wastewater
C15	Abatement of Air Pollution	1.5.5 (C-182)	CE	Copy of applicable Air Quality Permit	0	1	At least 10 days prior to applicable operation.
C16	Application of any pesticide	1.5.7 (C-194)	CE	Pesticide use plan for each pesticide proposed	0	1	At least 15 days prior to application of any pesticide

Table 1-B - List of submittals

RSN	Item	Reference provision, clause, or paragraph	Responsible code	Submittals required	No. of sets to be sent to:*		Due date or delivery time
					CO	CE	
C17	Blasting	3.2.4 (C-307)	CE	Two-part conceptual blasting plan	0	1	Not later than 20 days after the date of receipt of notice to proceed and at least 20 calendar days prior to initiating any blasting
				Individual shot plans	0	1	
C18	Waste	1.5.8	CE	(1) Name and location of TDSF.	0	1	15 days prior to use.
				(2) Copy of each hazardous waste manifest and certificate of disposal.	0	1	Not later than 7 days after disposal.
C19	Concrete	4.3.1	CE	1. Mix Design and color chart 2. Manufacturer's certifications 3. Mixing Plant and Location 4. Aggregate supplier 5. Location and source or water used in the production of Concrete.	0	1	20 days prior to installation
C20	Curing Compound	4.12.1	CE	Certifications	0	1	20 days prior to installation.
C21	Steel Plates	5.1.1	CE	Manufacturers Data	0	1	20 days prior to installation.
C22	Anchor Bolts	5.1.2	CE	Manufacturers Data	0	1	20 Days prior to installation.
C23	Elastomeric Sheeting	5.1.4	CE	Manufacturers Data	0	1	20 days prior to installation

\* CO indicates Contracting Officer and CE indicates Construction Engineer. For mailing addresses, see subparagraph entitled "Addresses" of paragraph entitled "Submittal Requirements."

## SECTION 1.2 - MATERIALS

## 1.2.1 MATERIALS TO BE FURNISHED BY THE CONTRACTOR

a. General. - The Contractor shall furnish all materials required for completion of the work. The words "material" or "materials" as used in these specifications to denote items furnished by the Contractor shall be construed to mean equipment, machinery, product, component, or any other item required to be incorporated in the work.

When a separate item which includes the furnishing of any material is provided in the schedule, the cost of furnishing, hauling, storing, and handling shall be included in the price offered for that item. When a separate item is not provided in the schedule for furnishing any material required to be furnished by the Contractor, the cost of furnishing, hauling, storing, and handling shall be included in the price offered for the work for which the material is required.

Materials furnished by the Contractor shall be of the type and quality described in these specifications. The Contractor shall make diligent effort to procure the specified materials from any and all sources, but where because of Government priorities or other causes, materials required by these specifications become unavailable, substitute materials may be used: Provided, That no substitute materials shall be used without prior written approval of the Contracting Officer, said written approval to state the amount of the adjustment, if any, to be made in favor of the Government. The Contracting Officer's determination as to whether substitution shall be permitted and as to what substitute materials may be used shall be final and conclusive. If the substitute materials approved are of less value to the Government or involve less cost to the Contractor than the materials specified, an adjustment shall be made in favor of the Government, and where the amount involved or the importance of the substitution warrants, a deductive modification to the contract will be issued. No payments in excess of prices offered in the schedule will be made because of substitution of one material for another or because of the use of one alternate material in place of another.

b. Inspection of materials. - Materials furnished by the Contractor which will become a part of the completed construction work shall be subject to inspection in accordance with clauses in subsection I.3 entitled "Materials and Workmanship" and "Inspection of Construction" at any one or more of the following locations, as determined by the Contracting Officer: at the place of production or manufacture, at the shipping point, or at the site of the work. To allow sufficient time to provide for inspection, the Contractor shall submit to the Contracting Officer, at the time of issuance, copies in triplicate of purchase orders, including drawings and other pertinent information, covering materials on which inspection will be made as advised by the Contracting Officer, or shall submit other evidence in the event such purchase orders are issued verbally or by letter.

The inspection of materials at any of the locations specified above or the waiving of the inspection thereof shall not be construed as being conclusive as to whether the materials and equipment conform to the contract requirements under the clause in subsection I.3 entitled "Inspection of Construction," nor shall the Contractor be relieved thereby of the responsibility for furnishing materials meeting the requirements of these specifications. Acceptance of all materials will be made only at the site of the work.

### 1.2.2 MATERIALS AND WORKMANSHIP - RECLAMATION

a. Materials. - In accordance with the clause in subsection I.3 entitled "Material and Workmanship," all materials furnished by the Contractor shall be new and of the most suitable grade for the purpose intended considering strength, ductility, durability, and best engineering practice.

Except as specified, materials shall conform to Federal specifications or standards, or, if there are no applicable Federal specifications or standards, materials shall conform to the specifications or standards of ANSI (American National Standards Institute), ASTM (American Society for Testing and Materials), ASME (American Society of Mechanical Engineers), SAE (Society of Automotive Engineers), IEEE (Institute of Electrical and Electronic Engineers), NFPA (National Fire Protection Association), or other nationally recognized standards organization. If the Contractor proposes to deviate from, or to use materials not covered by, the aforementioned specifications and standards, the Contractor shall submit, for approval, the justification for and exact nature of the deviation, and complete specifications for the materials proposed for use.

Parts shall be made accurately to standard gauge where possible. Threads, including but not limited to those of bolts, nuts, screws, taps, pipes, and pipefittings shall be unified screw threads conforming to ANSI B1.1 or B1.20.1. For internal connections only, the Contractor will be permitted to deviate from the ANSI standards, provided the Contractor furnishes a complete set of taps and dies as might be required to facilitate repair or replacement.

All fasteners shall be permanently marked with a symbol identifying the manufacturer and with symbol(s) indicating grade, class, type, and other identifying marks in accordance with reference or applicable standards.

b. Workmanship. - The Contractor shall be responsible for the accurate manufacture and fabrication of materials in accordance with best modern practice and the requirements of these specifications, notwithstanding minor errors or omissions therein.

### 1.2.3 REFERENCE SPECIFICATIONS AND STANDARDS

Materials, Contractor design, construction work, and other requirements which are specified by reference to Federal Specifications, Federal Standards, or other standard specifications or codes shall be in compliance with the latest editions or revisions thereof in effect on the date offers are received, including any amendments or supplements. In the event of conflicting requirements between a referenced specification, standard, or code and these specifications, these specifications shall govern.

Unless otherwise specified, all materials that will become a part of the completed work shall be new and shall conform to the Federal or other specifications and standards referred to herein. Where reference specifications numbers are designated throughout these specifications, they refer to Federal Specifications unless otherwise noted. In the event that the materials are not covered by Federal or other specifications, the materials furnished shall be of standard commercial quality. Where types, grades, or other options offered in the reference specifications are not specified in these specifications, the material furnished will be acceptable if it is in accordance with any one of the types, grades, or options offered.

Copies of many of the Federal Specifications and Standards may be examined at the office of the Bureau of Reclamation, Denver Office, building 67, Denver Federal Center, West 6th Avenue and Kipling Street, Denver, Colorado. Single copies of Federal Specifications and standards may be obtained without charge from any one of the General Services Administration Business Service Centers. See the provision in clause 52.210-1 entitled "Availability of Specifications Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions."

Bureau of Reclamation Specifications and Standards may be obtained from the Bureau of Reclamation, Attn D-3520, PO Box 25007, Denver CO 80225. This address may also be used to order the various manuals and standard specifications printed, reprinted, or published while the Bureau of Reclamation was officially named the Water and Power Resources Service. All references to Water and Power Resources Service or any form derivative thereof shall be considered synonymous with the Bureau of Reclamation.

Addresses for obtaining some industrial and governmental (other than Federal and Bureau of Reclamation specifications and standards) specifications, standards, and codes are listed in clause 52.210.3 entitled "Availability of Specifications Not Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions."

The Contractor shall maintain onsite, a copy of all specifications, standards, codes, manuals, and other documents that are referenced in these specifications and that are pertinent to the materials being installed or work proceeding at that time. These shall be available for use by the Contracting Officer and the Contracting Officer's representatives.

In accordance with clause 52.236-5 entitled "Material and Workmanship," the references to materials, wherein manufacturer's products or brands are specified by "brand name or equal" purchase descriptions, are made as standards of comparison only as to type, design, character, or quality of the article required, and do not restrict offerers or the Contractor to the manufacturer's products or to the specific brands named. It shall be the responsibility of the Contractor to prove equality of materials and products to those referenced and to provide all descriptive information, test results, and other evidence as may be necessary to prove the equality of materials or products which the Contractor offers as being equal to those referenced.

## **SECTION 1-3 LOCAL CONDITIONS**

### **1.3.1 ACCESS TO THE WORK AND HAUL ROUTES**

a. General. Access to the work. From Phoenix, the site may be reached by traveling north on Interstate 17, then approximately 16 kilometers west on State Highway 74, then 8 kilometers north on Castle Hot Springs Road, 5 kilometers on County Road Number 190, 5 kilometers east on County Road Number 191, and 12 kilometers east on an unnamed, unmaintained road and then into the Contractors work site by grading an access road down the creek channel approximately 91.4 meters to the work site. Approximately the last 12 kilometers of road are not maintained. The site can not be reached by road until Lake Pleasant water level falls below the 512 meter elevation. The water surface is expected to be below the 512 meter level by September 15, 1994. Rights-of-way for access to the work from existing roads will be provided by the Government in accordance with the clause in subsection 1.2 entitled "Rights-Of-Way." All work on the rights-of-way necessary for access to the site shall be performed by the Contractor.

The Contractor shall make his own investigation of the condition of available public or private roads and of clearances, restrictions, bridge-load limits, bond requirements, and other limitations that affect or may affect transportation and ingress and egress at the job sites. Subject to the clause 52.249-10 entitled "Default (Fixed-Price Construction)," the unavailability of transportation facilities or limitations thereon shall not become a basis for claims for damages or extension of time for completion of work. It shall be the Contractor's responsibility to construct and maintain, at his own expense and at his own risk, any haul roads, access roads, bridges, or drainage structures required for construction operations.

Temporary roads may be constructed, as approved by the Contracting Officer, provided, that such roads are removed prior to completion of the work and slopes are returned to prescribed lines as approved by the Contracting Officer.

b. Existing roads. - Existing roads are available for the Contractor's use subject to existing restrictions. The Contractor shall meet all conditions properly imposed upon the use of existing roads by those having jurisdiction thereover, including (without limitation of the generality of the foregoing) seasonal or other limitations or restrictions, the payment of excess size and weight fees, and the posting of bonds conditioned upon repair of road damage caused by the Contractor.

c. Haul routes. - The hauling of sand, gravel, earth materials, or other job hauling, over public highways, roads, or bridges shall be tarped to prevent spilling of material onto highways and shall be in compliance with the applicable local regulations and shall be such as to minimize interference with or congestion of local traffic. Where haul routes cross public highways or roads, the Contractor shall provide barricades, flagmen, and other necessary precautions for safety of the public as provided in paragraph 1.4.1 (Safety of the Public).

d. Cost. - The cost of all work described in this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.3.2 USE OF LAND FOR CONSTRUCTION PURPOSES

a. General. - The Contractor will be permitted to use Government land, controlled by the Bureau of Reclamation, for field offices, storage yards, roads, spoil areas, and other construction facilities required for construction purposes.

b. Government land. - The Contractor's use of Government land for construction purposes shall be subject to the requirements of the clauses in subsection I.2 entitled "Operations and Storage Areas," "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements," "Cleaning Up," and other applicable contract clauses, section 1.5 - Environmental Quality Protection of these specifications, and to the requirements of this paragraph. Such use shall not interfere with any part of the work under this contract, nor with the work of other contractors or the Government in the vicinity, nor with reservations made, or as may be made, by the Government for the use of such land.

Areas of Government land available for use by the Contractor for construction purposes are shown on drawings 344-330-14838 and 344-330-14841.

The Contractor's construction facilities shall be arranged and operated in a manner to preserve and protect existing features, trees, and vegetation to the maximum extent practicable. The location, construction, operation, maintenance, and removal of construction facilities on Government land shall be subject to the approval of the Contracting Officer.

Housing for Contractor personnel will not be permitted on Government land, except housing for guards or watchmen as may be approved by the Contracting Officer.

Upon completion of the work, and following removal of construction facilities and required cleanup, Government land used for construction purposes and not required for the completed installation shall be regraded in accordance with paragraph 1.5.1 (Landscape Preservation).

c. Cost. - No charge will be made to the Contractor for the use of Government land for construction purposes. In accordance with the clause in subsection I.2 entitled "Operations and Storage Areas" all work required by this paragraph shall be at the expense of the Contractor.

#### 1.3.3 ELECTRIC POWER FOR CONSTRUCTION PURPOSES

The Contractor shall make all necessary arrangements and shall provide all electric power required for his construction purposes. This shall include providing all necessary generators, transmission lines, distribution circuits, transformers, and other electrical equipment required for distributing the power to the place or places of use by the Contractor.

There is no power at the site.

At the termination of the contract under these specifications, the Contractor shall dismantle and remove all distribution lines serving his installations, or those of his subcontractors.

No direct payment will be made to the Contractor for providing electric power for construction purposes, and the cost thereof shall be included in the prices offered in the schedule for other items of work.

#### 1.3.4 WATER FOR CONSTRUCTION PURPOSES

a. General. - The Contractor shall furnish all water required for construction purposes. The Contractor shall make all arrangements for obtaining water and provide all means for conveying water to points of use.

Water to be used for construction purposes under this contract may be available from Lake Pleasant from either Central Arizona Water Conservation District or Maricopa Water District.

b. Cost. - The cost of furnishing water and of providing necessary facilities and conveying water to points of use shall be included in the prices offered in the schedule for other items of work.

#### 1.3.5 - CONSTRUCTION AT EXISTING WATERCOURSES

Where the work to be performed under these specifications crosses or otherwise interferes with artificial or natural watercourses, the Contractor shall provide for such watercourses, and shall perform such construction during the progress of the work so that no damage will result to either public or private interests. The term "watercourses" includes

ditches, terraces, furrows, or other features of surface irrigation systems. The Government does not represent that the locations of watercourses shown on the drawings are exact. It shall be the responsibility of the Contractor to determine the actual locations of and make provision for all watercourses.

Before any watercourse is taken out of service, permission shall be obtained from the owners and the Contracting Officer. The Contractor shall be liable for all damage that may result from failure to provide for watercourses during the progress of the work, and the Contractor shall indemnify and hold harmless the Government from claims of whatsoever nature or kind arising out of or connected with damage to watercourses encountered during construction, injury to persons or damage to property resulting from the negligent, accidental, or intentional breaching of watercourses.

If the Contractor does not maintain the existing watercourses in such condition that no damage will result to either public or private interests, the Government will cause the necessary repairs to be made and backcharge the Contractor for such work.

Except as otherwise provided below, the cost of all work described in this paragraph shall be included in the prices offered in the schedule for other items of work.

Where construction of new structures or modifications of existing structures are required in order to continue a watercourse in operation beyond the period of the contract, the Contractor shall notify the Contracting Officer so that arrangements can be made with the owners for the construction or modifications required. When it is determined that such work is to be performed by the Contractor, and such items of work are not provided for in the schedule, the Contractor shall perform the necessary work in accordance with the clause in subsection I.4 entitled "Changes."

Where watercourses are encountered, but are not shown on the drawings or otherwise provided for in these specifications, all additional work required to be performed by the Contractor as a result of encountering the watercourses shall be performed in accordance with the clause in subsection I.4 entitled "Changes."

#### 1.3.6 - TELEPHONE SERVICE

It shall be the Contractor's responsibility to arrange for its own telephone or other communications requirements during construction. It is the Contractor's responsibility to coordinate its acquisition of services from the local telephone company and for furnishing, installing, and maintaining all telephone equipment and wiring at the jobsite. The Contractor shall pay all local service charges involved, and long distance calls shall be paid for by the party making the call. Telephone service is not required under this contract. There is no existing telephone service at the site.

### SECTION 1.4 - SAFETY

#### 1.4.1 SAFETY OF THE PUBLIC

Roads subject to interference by the work shall be kept open or suitable detours shall be provided and maintained by the Contractor. The Contractor shall provide, erect, and maintain all necessary barricades, suitable and

sufficient flasher lights, flagmen, danger signals, and signs, and shall take all necessary precautions for the protection of the work and the safety of the public.

If directed, the Contractor shall erect such additional warning and directional signs in connection with the work as may be required by the Government.

Roads closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning and detour signs. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise.

No construction work along public or private roads may proceed until the Contractor has proper barricades, flasher lights, flagmen, signals, and signs in place at the construction site.

Specific signs, signals, barricades, and flagmen requirements are detailed in sections 9 and 19 of Reclamation's publication "Reclamation Safety and Health Standards" and the American National Standards Institute "Manual on Uniform Traffic Control Devices for Streets and Highways" (ANSI D6.1).

The Contractor shall construct, maintain, and remove detours as set forth in paragraph. The Contractor shall prepare a traffic control plan which shall be submitted for written approval of the Contracting Officer before interference with public traffic will be permitted. The furnishing of such approval by the Government shall in no way relieve the Contractor from full responsibility for the protection of the work and the safety of the public.

The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.4.2 SUBMISSION OF MATERIAL SAFETY DATA SHEETS FOR HAZARDOUS MATERIALS

Federal Standard No. 313, as amended, for the preparation and submission of material safety data sheets is hereby incorporated and made a part of these specifications.

In accordance with the clause in subsection I.6 entitled "Hazardous Material Identification and Material Safety Data," the Contractor shall submit a completed MSDS (Material Safety Data Sheet), Department of Labor Form OSHA-174, or GSA-approved Alternate Form A for each hazardous material as required by Federal Standard No. 313, as amended. The information in this MSDS shall be followed to assure safe use, handling, storage, and an environmentally acceptable disposal of the commodity used on the Bureau jobsite or by Bureau activities.

In lieu of the 5-day submittal requirement in the clause in subsection I.6 entitled "Hazardous Material Identification and Material Safety Data," the Contractor shall send, not less than 10 days prior to jobsite delivery of each hazardous material, completed MSDS and identification and certification for the material to the Construction Engineer, Attn: APO-160, PO Box 9980, Phoenix AZ 85068 with copies to the Contracting Officer [RSN C13].

The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

**SECTION 1.5 - ENVIRONMENTAL QUALITY PROTECTION****1.5.1 LANDSCAPE PRESERVATION**

The Contractor's construction facilities and operations, as well as those of persons or parties operating or associated with the Contractor, on Government land shall be subject to the requirements of the clauses in subsection I.2 entitled "Operations and Storage Areas," "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements," "Cleaning Up," and other applicable contract clauses, this section, and the requirements of this paragraph.

The Contractor shall exercise care to preserve the natural landscape, and shall conduct operations so as to prevent unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Movement of crews and equipment within the rights-of-way and over routes provided for access to the work shall be performed in a manner to prevent damage to grazing land or property. When no longer required, construction roads shall be restored to original contours and made impassable to vehicular traffic.

Upon completion of the work, and following removal of construction facilities and required cleanup, Government land used for construction purposes and not required for the completed installation shall be scarified and regraded, as required, so that all surfaces blend with the natural terrain and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

**1.5.2 PROTECTION, REPAIR, AND REPLACEMENT OF EXISTING VEGETATION**

a. Protection. - In accordance with the clause in subsection I.2 entitled "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements," the Contractor shall preserve and protect existing vegetation not required, or otherwise authorized, to be removed. Vegetation shall be protected from damage or injury caused by Contractor construction operations, personnel, or equipment by the use of protective barriers or other methods approved by the Contracting Officer. Removal of existing vegetation not specifically required to be removed will require prior approval by the Contracting Officer.

Except in emergency cases or as approved by the Contracting Officer, trees shall not be used for anchorages. For such use, the trunk shall be wrapped with a sufficient thickness of approved protective material before any rope, cable, or wire is placed. Where tree climbing is necessary, safety ropes shall be used, and the use of climbing spurs will not be permitted.

Clearings and cuts through vegetation shall be minimized to the greatest extent practicable, and the clearings and cuts required or otherwise authorized shall be irregularly shaped to soften undesirable aesthetic impacts.

b. Repair or treatment. - The Contractor shall be responsible for injuries to vegetation caused by Contractor operations, personnel, or equipment. The term "injury" shall include, without limitation, bruising, scarring, tearing, and breaking of roots, trunks, or branches. Injured vegetation shall be repaired or treated without delay. Repair or treatment shall be

as recommended by, and under the direction of, an experienced horticulturist or licensed tree surgeon provided by the Contractor and approved by the Contracting Officer.

c. Replacement. - Any tree or shrub not required or otherwise authorized to be removed that, in the opinion of the Contracting Officer, is damaged or injured beyond saving by Contractor operations, personnel, or equipment shall be removed and replaced by the Contractor. Replacements shall be of the same species, or other approved species, and of the maximum size practicable to plant and sustain in the particular environment.

d. Cost. - Except as provided below, the cost of all work required by this paragraph shall be included in the prices offered in the schedule for other items of work. The repair or treatment of injured vegetation and the replacement of trees or shrubs shall be at the expense of the Contractor.

### 1.5.3 PROTECTED SPECIES

a. General. - Certain native species in the State of Arizona are considered protected plant or animal species under State law(s). The Contracting Officer has ascertained that Gila Monsters, Desert Tortoise and Leopard Frogs are protected species which may exist in the areas to be disturbed by construction activities. In accordance with State law, the Contracting Officer may arrange for removal of the protected species, and the Contractor shall cooperate with those performing such removal. If these species are not removed, the Contractor shall cooperate with and abide by any protection plans developed by appropriate State entities to avoid damage to or disturbance of any protected species.

The Contractor shall insert this paragraph in all subcontracts which involve the performance of work in areas where protected species may occur.

b. Cost. - The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

### 1.5.4 PREVENTION OF WATER POLLUTION

a. General. - The Contractor shall control pollutants by use of sediment and erosion controls, wastewater and stormwater management controls, construction site management practices, and other controls, including State and local control requirements.

(1) Sediment and erosion controls. - The Contractor shall establish methods for controlling sediment and erosion which shall address vegetative practices, structural control, silt fences, straw dikes, sediment controls or operator controls as appropriate. Stormwater management measures shall be instituted as required, including velocity dissipators, and solid waste controls shall address controls for building materials and offsite tracking of sediment.

(2) Wastewater and stormwater management controls. -

(a) Pollution prevention measures. - The Contractor shall use methods of dewatering, unwatering, excavating, or stockpiling earth and rock materials which include prevention measures to control silting and erosion, and which will intercept and settle any runoff of sediment-laden waters. Wastewater from general construction activities, such as drainwater collection, or other construction operations, shall not enter flowing or dry watercourses without the

use of approved turbidity control methods. Stormwater runoff from upslope areas shall be diverted away from disturbed areas.

The Contractor shall not operate mechanized equipment in waterbodies without having first obtained a section 404 permit, and then, only as necessary, to construct crossings or perform the required construction.

(3) Construction site management. -

(a) Contractor construction operations. - The Contractor shall perform construction activities by methods that will prevent entrance, or accidental spillage, of solid matter, contaminants, debris, or other pollutants or wastes, into streams, flowing or dry watercourses, lakes, wetlands, reservoirs, or underground water sources. Such pollutants and wastes include, but are not restricted to: refuse, garbage, cement, sanitary waste, industrial waste, hazardous materials, radioactive substances, oil and other petroleum products, aggregate processing, tailings, mineral salts, and thermal pollution.

(b) Stockpiled or deposited materials. - The Contractor shall not stockpile or deposit excavated materials, or other construction materials, near or on stream banks, lake shorelines, or other watercourse perimeters where they can be washed away by high water or storm runoff, or can, in any way, encroach upon the watercourse.

(c) Oil storage tanks management. -

(aa) Storage tank placement. - All oil or other petroleum product, (hereinafter referred to collectively as oil), storage tanks shall be placed at least 6.1 meters from streams, flowing or dry watercourses, lakes, wetlands, reservoirs, and any other water source.

(bb) Storage area dikes. - Storage areas shall be diked at least 305 millimeters high or graded and sloped to permit safe containment of leaks and spills equal to the capacity of all tanks and/or containers located within each area, plus 153 millimeters of freeboard.

(cc) The Contractor shall not store more than 500 liters of petroleum products on the site at any one time.

(dd) Diked area barriers. - Diked areas shall have an impermeable barrier at least 10 mils thick. Areas used for refueling operations shall have an impermeable liner at least 10 mils thick buried under 50 to 100 millimeters of soil.

(ee) Underground tank prohibition. - The Contractor shall not use underground storage tanks.

(4) Construction safety standards. -The Contractor shall comply with the sanitation and potable water requirements of section 7 of "Reclamation Safety and Health Standards."

(5) Laws, regulations, and permits. - The Contractor shall perform construction operations in such a manner as to comply, and ensure all subcontractors to comply, with: (a) all applicable Federal, State, and local laws, orders, regulations, and Water Quality Standards concerning the control and abatement of water pollution; and (b) all terms and conditions of the applicable permits issued by the permit issuing

authority. In the event there is a conflict between Federal, State, and local laws, regulations, and requirements, the most stringent shall apply.

(6) Contractor violations. - If noncompliance should occur, the Contractor shall report this to the Contracting Officer immediately (orally), with the specific information submitted in writing within 2 calendar days. Consistent violations of applicable Federal, State, or local laws, orders, regulations, or Water Quality Standards may result in the Contracting Officer stopping all site activity until compliance is ensured. The Contractor shall not be entitled to any extension of time, claim for damage, or additional compensation by reason of such a work stoppage. Corrective measures required to bring activities into compliance shall be at the Contractor's expense.

b. Required permits. -

(1) Wastewater discharge permit. -

(a) As required under section 402 of the Clean Water Act (Public Law 92-500 as amended). The Bureau of Reclamation has obtained a permit to discharge pollutants. This permit is available for inspection at Arizona Projects Office, Bureau of Reclamation, 23636 North 7th Street, P.O. Box 9980, Phoenix, Arizona 85064.

(b) The Contractor shall comply with all terms and conditions as stated in the permit.

(c) The Contractor shall provide all monitoring and water treatment, if necessary, to achieve compliance with the permit conditions, and shall provide the recordkeeping required of the section 402 permittee, as stated in the section 402 permit.

(d) The monitoring required of the Contractor to meet the section 402 requirements shall include sampling, as well as all required laboratory tests, to determine effluent characteristics.

(e) The Contractor shall provide all monitoring results to the Contracting Officer 2 weeks prior to the submittal deadline to the appropriate State and/or Environmental Protection Agency (EPA) Regional Administrator. Copies of all information transmitted to EPA and/or the State shall be sent to the Contracting Officer.

c. Contractor responsibilities. -

(1) Any permits obtained by the Bureau of Reclamation are exceptions to the clause in subsection I.2 entitled "Permits and Responsibilities," which requires the Contractor to obtain all necessary licenses and permits.

(2) Monitoring. - The Contractor is required to conduct monitoring in order to meet the requirements of the permits which may include:

(a) sampling, (b) site inspections, and (c) all required laboratory tests to determine effluent characteristics.

(3) Reporting results. - The Contracting Officer will report all required monitoring results to the appropriate agencies. The section 402 wastewater discharge permit has specific reporting requirements for the permittee for noncompliance, when effluent limitations are exceeded.

(4) Recordkeeping. - The Contractor shall retain all records and data required by the permits referred to in subparagraph b. above for the time period specified in the contract.

d. Contractor required plan submittals. -

(1) General. - Submittals shall be in accordance with this paragraph and paragraph 1.1.6 (Submittal Requirements, RSN C14).

(2) Water management plan. - The Contractor shall submit a detailed Water Quality Management Plan (RSN-C14) to the Contracting Officer for review, approval, and use, at least 20 days prior to commencing construction activities that involve less than 5 acres of land in the vicinity of any stream, flowing or dry watercourse, lake, wetland, reservoir, or underground water source.

(a) Contents of a Water Quality Management Plan. - The Contractor's Water Quality Management Plan shall contain the following information:

(aa) Name of the person who will be responsible for implementing and carrying out the plan.

(bb) Precautions which will be taken to avoid discharge or accidental spills of pollutants into a river, stream, watercourse, or lake.

(cc) Methods of handling and treating wastewater, including drawings or maps indicating the locations for evaporation or settling ponds, treatment facilities, best management practices to prevent water pollution, and discharge points. Provide estimates of the amount of wastewater which may be handled and treated at each location.

(dd) Methods for preventing or controlling runoff and erosion for all construction sites, both during and after construction, including:

1. Access and haul roads;
2. Stockpile, borrow, and waste areas;
3. Construction plant and equipment yards;
4. All excavated surfaces;
5. Other impacted areas.

(ee) Information on vegetative practices, structural controls, silt fences, straw dikes, sediment controls, operator controls, stormwater controls, and solid waste controls. Stormwater controls shall address appropriate stormwater management measures including velocity dissipators. Solid waste controls shall address controls for building materials and offsite tracking of sediment.

d. Cost. - Except as specified herein, the cost of complying with this paragraph shall be included in the prices offered in the schedule for items of work which necessitate the water pollution prevention measures required by this paragraph.

### 1.5.5 ABATEMENT OF AIR POLLUTION

a. General. - The Contractor shall comply with applicable Federal, State, and local laws and regulations and with the requirements of this paragraph concerning the prevention and control of air pollution. Should a conflict exist in the requirements for abatement of air pollution, the most stringent requirement shall apply. The Contractor shall utilize such methods and devices as are reasonably available to prevent, control, and otherwise minimize atmospheric emissions or discharges of air contaminants.

Equipment and vehicles that show excessive emissions of exhaust gases shall not be operated until corrective repairs or adjustments reduce such emissions to acceptable levels.

At least 10 days prior to commencing any activity for which an Air Quality Permit is required, the Contractor shall submit, for informational purposes, a copy of the applicable Air Quality Permit. Air Quality Permits are required for certain construction related activities including, but not limited to, earth moving, sandblasting, aggregate processing, welding, spray coating operations, or other processes which discharge pollutants into the open air. Air Quality Permits, and information concerning the requirements, are available from:

Arizona Department of Environmental Quality  
3033 N Central Avenue  
Phoenix, AZ 85012

Or by calling (602) 257-2300.

Abatement of dust pollution shall be in accordance with the applicable requirements of "Reclamation Safety and Health Standards," and paragraph 1.5.6 (Dust Abatement).

Burning of cleared materials, combustible construction materials, and rubbish shall be in accordance with paragraph 1.5.8 (Cleanup and Disposal of Waste Materials).

b. Submittal. (RSN C-15) shall be in accordance with this paragraph and paragraph 1.1.6 (Submittal Requirements).

c. Cost. - The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

### 1.5.6 PRESERVATION OF HISTORICAL AND ARCHEOLOGICAL DATA

a. General. - Federal legislation provides for the protection, preservation, and collection of scientific, prehistorical, historical, and archeological data, including relics and specimens, which might otherwise be lost due to alteration of the terrain as a result of any Federal construction project.

Should the Contractor, or any of the Contractor's employees, or parties operating or associated with the Contractor, in the performance of this contract discover evidence of possible scientific, prehistorical, historical, or archeological data, the Contractor shall immediately cease work at that location and notify the Contracting Officer, giving the location and nature of the findings. The Contractor shall forward written confirmation to the Contracting Officer within 2 days. The Contractor shall exercise care so as not to disturb or damage artifacts or fossils

uncovered during excavation operations, and shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the Government.

Any Person who, without permission, injures, destroys, excavates, appropriates, or removes any historical or prehistorical artifact, object of antiquity, or archeological resource on the public lands of the United States is subject to arrest and penalty of law.

Where appropriate by reason of discovery, the Contracting Officer may order delays in the time of performance or changes in the work, or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of the contract. The Contractor shall insert this paragraph in all subcontracts which involve the performance of work on the terrain of the site.

b. Cost. - Except as provided above, the cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.5.7 PESTICIDES

a. General. - Pesticides include herbicides, insecticides, fungicides, rodenticides, piscicides, avicides, surface disinfectants, animal repellents, and insect repellents.

Pesticides shall be only those registered with the EPA (Environmental Protection Agency) in compliance with the Federal Environmental Pesticide Control Act of 1972, or with State or local agencies.

The Contractor shall keep records of the types and amounts of pesticides purchased, delivered, stored, mixed, and actually used, and the means of disposal of all excess. These records shall be kept current and accurate, and shall be available for review by the Contracting Officer.

The Contractor shall be responsible for all damages resulting from the use of pesticides under these specifications in accordance with the clause 52.236-7 entitled "Permits and Responsibilities."

b. Submittals. - Submittals shall be in accordance with this paragraph and paragraph 1.1.6 (Submittal Requirements). (RSN C16)

(1) At least 15 days prior to the application of the first pesticide, the Contractor shall submit, for approval, a pesticide use plan for all pesticides proposed for use: except, no plan or approval will be required for insect repellents to be applied directly to clothing, or for small quantities of aerosol insecticides, such as fly and spider sprays, to be applied within or directly to offices or shop buildings.

The pesticide use plan shall include the following for each proposed pesticide:

(a) Pesticide Use Proposal Form 7-2223, completed by the entity to be responsible for application of the pesticide. The form(s) is available from any of the following:

- (aa) Construction Engineer  
Attention APO 2231  
P.O. Box 9980  
Phoenix, AZ 85068
- (bb) Regional Pesticide Coordinator  
Bureau of Reclamation  
Attention LC-400  
P.O. Box 61470  
Boulder City, Nevada 89006-1470
- (cc) Bureau of Reclamation  
Attn Code D-5522  
PO Box 25007  
Denver CO 80225

(b) The complete "label" of the proposed pesticide, as defined by the Federal Insecticide Fungicide Rodenticide Act of 1947, as amended in 1972 and 1978, containing the following:

- (aa) Brand, common, and chemical names.
- (bb) Ingredients and net contents.
- (cc) Use classification and registered uses.
- (dd) Name and address of manufacturer or registrant, EPA registration number, and the establishment number.
- (ee) Directions for use, including safety information, warnings, and precautions.

(c) A copy of the Material Safety Data Sheet as required by paragraph 1.4.2 (Submission of Material Safety Data Sheets for Hazardous Materials).

(2) In lieu of the 15-day-prior submission date specified above, the Contractor shall submit the pesticide use plan at least 45 days prior to the application of the first pesticide if any of the chemicals or applications meet any of the following:

- (a) Chemicals categorized by the EPA for "restricted use."
- (b) Chemicals applied to, or that can reasonably be expected to contact, water: except, this requirement shall not apply to "Rodeo" or copper sulfate used for the control of noxious weeds.
- (c) Chemicals expected to endanger threatened animal or plant species.

In addition to the requirements of paragraph 1.1.6 (Submittal Requirements RSN C16), one copy of the pesticide use plan and transmittal letter shall be submitted to the Regional Pesticide Coordinator in Boulder City, Nevada.

c. Storage, mixing, and application. - The Contractor shall read and comply with all labeling and Material Safety Data Sheet requirements when dealing with pesticides.

Pesticides shall be considered harmful chemicals, and the applicable requirements of "Reclamation Safety and Health Standards" shall apply to the storage, mixing, and application of pesticides. Should a conflict exist in the requirements for dealing with pesticides, the most stringent requirement shall apply.

d. Cost. - The cost of complying with this paragraph shall be included in the prices offered in the schedule for other items of work.

#### 1.5.8 CLEANUP AND DISPOSAL OF WASTE MATERIALS

a. General. - The Contractor shall be responsible for the cleanup and disposal of waste materials and rubbish. The disposal of waste materials and rubbish shall be in accordance with applicable Federal, State, and local laws and regulations, with applicable requirements of "Reclamation Safety and Health Standards," and with the requirements of this paragraph. Should a conflict exist in the requirements for cleanup and disposal of waste materials, the most stringent requirement shall apply.

The Contractor shall keep records of the types and amounts of waste materials produced, and of the disposal of all waste materials on or off the jobsite.

In the event of the Contractor's failure to perform the work required by this paragraph, the work may be performed by the Government, and the Contractor will be backcharged for the cost of such work. The Contractor's surety or sureties shall be liable for such payment until received by the Government.

b. Cleanup. - In accordance with clause 52.236-12 entitled "Cleaning Up," the Contractor shall keep work and storage areas free from accumulations of waste materials and rubbish, and before completing the work, shall remove all buildings, rubbish, unused materials, concrete forms, and other like materials, which are not a part of the permanent work.

The cleanup of any petroleum spill shall be remediated to the more stringent requirement of 100 mg/kg or the State action levels.

Upon completion of the work, and following removal of construction facilities and required cleanup, work areas shall be regraded and left in a neat manner conforming to the natural appearance of the landscape in accordance with paragraph 1.5.1 (Landscape Preservation).

In addition, the Contractor will be required to conduct an environmental site assessment at the following Contractor use locations:

- (1) All hazardous waste accumulation areas;
- (2) All hazardous material and petroleum dispensing and storage areas where the aggregate storage of hazardous materials or petroleum at the site is or has been over 417 liters.

This site assessment shall be performed by a qualified environmental consultant or equivalent and shall document through appropriate analytical sampling that the site is free of the effects of contamination (i.e., contaminant concentrations less than State action cleanup levels).

c. Disposal of hazardous waste and materials. - Materials or wastes, defined as hazardous by 40 CFR 261.3; and hazardous materials as defined by Federal Standard 313, as amended; or by other Federal, State, or local laws or regulations, used by the Contractor or discovered in work or storage

areas, shall be disposed of in accordance with these specifications and applicable Federal, State, and local laws and regulations. Unknown waste materials that may be hazardous shall be tested, and the test results shall be submitted to the Contracting Officer for review.

Waste materials known or found to be hazardous shall be disposed of in approved treatment or disposal facilities. Hazardous wastes shall be recycled whenever possible. A copy of all hazardous waste manifest will be required from all treatment disposal facilities.

The Contractor shall submit the name and location of the selected Treatment, Storage, or Disposal Facility (TSDF) for approval 15 days prior to disposal of hazardous waste in accordance with paragraph 1.1.6 Submittal Requirements (RSN C18). Included with this submittal shall be a certification that the selected site is in good standing with Federal and State regulators (e.g., with no unresolved violations) and is an approved TSDF for the disposal of the hazardous waste generated under this contract.

A copy of each hazardous waste manifest and certificate of disposal shall be submitted in accordance with paragraph 1.1.6 Submittal Requirements (RSN C18).

Waste materials discovered at the construction site shall immediately be reported to the Contracting Officer. If the waste may be hazardous, the Contracting Officer may order delays in the time of performance or changes in the work, or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of the contract.

d. Disposal of other solid waste materials.

(1) General. - Waste materials including, but not restricted to, refuse, garbage, sanitary wastes, industrial wastes, and oil and other petroleum products, shall be disposed of by the Contractor. Except as provided in paragraphs 2.1.1 (Clearing), Disposal of combustible vegetation type materials shall be by either burning with approved permit from ADEQ, or by removal from the construction area. Disposal of all other combustible and noncombustible materials shall be by removal from the construction area, unless otherwise noted in these specifications.

(2) Disposal by burning. - The Contractor shall secure all necessary burning permits from the State and local authorities. All burning shall be in accordance with Federal, State, and local laws and regulations governing fire protection and air pollution.

All materials to be burned shall be piled in designated burning areas in such a manner as to cause the least fire hazards. Burning shall be thorough and complete, and all charred pieces remaining after burning, except for scattered small pieces, shall be removed from the burning area and disposed of as otherwise provided in this paragraph. In no case shall unapproved materials, such as tires, plastics, rubber products, asphalt products, hazardous materials, or other materials that create heavy black smoke or noxious or nuisance odors be burned.

The Contractor shall, at all times, take special precautions to prevent fire from spreading beyond the piles being burned, and shall be responsible for all damages resulting from burning operations under these specifications in accordance with clause 52.236-7 entitled "Permits and Responsibilities." The Contractor shall have available, at all times, suitable equipment and supplies for use in preventing and suppressing

fires and shall be subject to all laws and regulations locally applicable for presuppression, suppression, and prevention of fires.

(3) Disposal by removal. - Waste materials to be disposed of by removal from the construction area shall be removed prior to completion of the work under these specifications. All materials removed shall become the property of the Contractor.

Where waste materials are to be removed, they shall be disposed of only at an approved landfill. The Contractor shall submit the name and location of the facility to receive the waste materials for approval 15 days prior to the shipment of waste materials in accordance with paragraph 1.1.6 Submittal Requirements (RSN C18). The Contractor shall make any necessary arrangements with private parties and county officials pertinent to locations and regulations for such disposal and shall pay any fees or charges required for such disposal.

e. Payment. - Except as provided above, the payment for cleanup and disposal of waste materials in accordance with this paragraph shall be included in the prices offered in the schedule for other items of work.

## SECTION 1.6 GEOLOGY

### 1.6.1 GEOLOGICAL INVESTIGATION

The fish barrier will be founded on andesite. The andesite is hard to very hard and intensely fractured. The joints are oriented N20-60W and dip from 45 SE to predominantly near vertical. Most joints are healed with calcite and/or dolomite with minor iron oxide staining and are slightly rough. Some joints contain silica and/or clay with rock fragments in addition to the calcite and/or dolomite. Most infillings range from 3 to 140 millimeters thick (average 13 millimeters thick). The andesite is aphanitic and moderately weathered to intensely weathered. The surface outcrop is rounded by scouring and erosion. The alluvium downstream from the andesite outcrop ranges approximately 30 to 1500 mm thick (average 600 to 900 mm) filling the scoured surface of bedrock downstream. The alluvium is composed of loose sand fine gravel at the surface but it is anticipated the alluvium will be composed of loose sandy gravel with cobbles and boulders at depth. Adjacent to the rock ledge at the fish barrier site, the alluvium is at least 610 mm deep. Additionally the site is located in a normally dry stream channel. However, this drainage may run under an average rainfall. Water lines on the canyon wall indicate the water flows may be 3 000 millimeters high or higher through the construction site.

## DIVISION 2 - SITE WORK

## SECTION 2.1 - CLEARING AND GRUBBING

## 2.1.1 CLEARING

a. The Contractor shall clear those portions of rights-of-way to be occupied by permanent construction under these specifications and those portions required for access to the work and wastepile sites of all vegetation such as trees, shrubs, brush, stumps, exposed roots, down timber, branches, grass, and weeds; of all rubbish; and of all other objectionable material as determined by the Contracting Officer.

Vegetation designated for preservation within clearing limits, and all vegetation outside clearing limits shall be preserved and protected in accordance with paragraph 1.5.2 (Protection, Repair, and Replacement of Existing Vegetation) and paragraph 1.5.3 (Protected Species).

b. Disposal of cleared material. - Nonvegetative material from clearing operations shall be disposed of in accordance with paragraph 1.5.8 (Cleanup and Disposal of Waste Materials).

Subject to approval and direction, vegetative material from clearing operations shall be disposed of by burning, chipping and spreading, or removing from the worksite.

Disposal by burning, or removing from the worksite shall be in accordance with paragraph 1.5.8 (Cleanup and Disposal of Waste Materials).

Where approved or directed, material to be disposed of by chipping and spreading shall be reduced to chips of 1/2-inch maximum thickness. Chips shall be distributed uniformly on designated areas shown on the drawings and shall be mixed with underlying earth so as to not float or support combustion.

c. Cost. - All costs of clearing, including disposal of cleared material, shall be included in the prices offered in the schedule for excavation.

## SECTION 2.2 - USE OF WATER

## 2.2.1 WATER FOR DUST ABATEMENT

a. General. - During the performance of work required by these specifications, or any operations appurtenant thereto, and whether on rights-of-way provided by the Government or elsewhere, the Contractor shall comply with applicable Federal, State, and local laws and regulations, with applicable requirements of Reclamation's "Construction Safety Standards," and with the requirements of this paragraph regarding the prevention, control, and abatement of dust pollution. Should a conflict exist in the requirements for dust abatement, the most stringent requirement shall apply. The Contractor shall be responsible for all damages resulting from dust originating from Contractor operations under these specifications in accordance with the clause 52.236-7 entitled "Permits and Responsibilities."

The Contractor shall provide all labor, equipment, and materials, and shall use efficient methods wherever and whenever required to prevent dust nuisance or damage to persons, property, or activities, including, but not limited to, wildlife habitats, dwellings and residences, agricultural activities, recreational activities, traffic, and similar conditions.

The Contracting Officer has the authority to stop any construction activity contributing to dust levels which are excessive or in violation of Federal, State, or local laws. All expenses resulting from such a work stoppage shall be the responsibility of the Contractor.

b. Cost. - Except as specified above for damages and work stoppage, the cost of complying with this paragraph shall be included in the lump sum prices offered in the schedule for dust abatement.

## DIVISION 3 EARTHWORK

## SECTION 3.1 EXISTING ROAD WORK

## 3.1.1 ROAD WORK

a. General - The work will include sufficient roadwork and maintenance to the unnamed county road to provide access to the work site. In general, blade work alone will be adequate. The contractor shall not do more work to the existing road than is required to provide vehicular access to the site. There are approximately 12 kilometers of road that at present is not maintained. The contractor will be responsible for determining the roadwork necessary for his requirements.

b. Payment - Payment for road improvements will be made at the lump sum price offered therefor in the scheduled for road improvements which price shall include all costs for equipment, labor and material to improve the road to meet the Contractors needs, and to provide all maintenance for the duration of the work.

## SECTION 3.2 EARTHWORK

## 3.2.1 DEFINITION OF MATERIALS

For purposes of these specifications, other than for payment, materials of earthwork and embankment construction are defined in detail as follows:

a. Rock. - Rock is defined as sound and solid mass, layer, or ledge of mineral matter in place and of such hardness and texture that:

(1) In areas where the use of a ripper-equipped, crawler-type tractor is practicable, it cannot be effectively loosened or broken down by ripping in a single pass with a late model tractor-mounted hydraulic ripper equipped with one digging point of standard manufacture's design adequately sized for use with, and propelled by, a crawler-type tractor rated between 385- and 410-net flywheel horsepower, operating in low gear, or

(2) In areas where the use of ripper-equipped, crawler-type tractor as described above is impracticable, it cannot be loosened or broken down by a 6-pound drifting pick. The drifting pick shall be class D, Federal Specifications GGG-H506D, with a handle not less than 864 millimeters in length.

b. Solid waste and/or waste materials. - Is as defined in paragraph 1.5.8.D.

c. Common material. - All earth materials which do not meet the requirements as defined in subparagraphs a and b above.

## 3.2.2 SITE GRADING

a. General - The Contractor shall be required to scarify and grade those portions of rights-of-way, from the county road to the work site, and access to the wastepile site. Grades are to be no more than 15%. The grading operations shall be performed in accordance with paragraphs 1.5.2 (Protection, Repair, and Replacement of Existing Vegetation), 1.5.5 (Dust Abatement), and 2.1.1 (Clearing).

The Contractor's operation shall be conducted in such a manner as to prevent airborne dust. Prewetting the material to help in the elimination of dust will be allowed, along with additional water applied during construction. However, the Contractor shall only apply enough water to suppress the dust. Excessive amounts of applied water causing any runoff or ponding is strictly prohibited. All costs associated for dust abatement required under this paragraph shall be included in the lump sum offered in the schedule for providing dust abatement.

b. Scarifying - After the Contractor has completed the requirements of paragraph 2.1.1 (Clearing), the Contractor shall scarify the top 6 inches of the entire area and areas as directed by the Contracting Officer's Technical Representative

c. Grading - All scarified areas shall be graded, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate revegetation and provide for proper drainage for the prevention of erosion.

d. Payment - The payment for scarifying and grading the site shall be included in the lump sum price offer therefor in the schedule for road work, which price shall include the cost of all labor, material, and equipment required by this paragraph.

### 3.2.3 EXCAVATION

a. General. - The Contractor shall perform all excavation required under these specifications to the depths and dimensions required by these specifications.

Excavation will include the removal of all alluvial material to bedrock in the areas where concrete is to be placed, and shall also include removal of rock to create a channel downstream from the fish barrier. Removal of rock may require blasting to provide adequate channelization of the stream bed to prevent ponding of water.

All necessary precautions shall be taken to preserve the material below and beyond the established lines of all excavation in the soundest possible condition. Any damage to the work due to the Contractor's operations shall be repaired at the expense of and by the Contractor. Materials beyond the required or prescribed excavation lines which is loosened by the Contractor's operations shall be removed by and at the expense of the Contractor.

b. Overexcavation - Except as ordered in writing by the Contracting Officer, excess excavation or overexcavation performed by the Contractor beyond the required or prescribed excavation lines for any purpose or reason, and repair occasioned thereby shall be at the expense of the Contractor. If at any point in excavation material is excavated beyond the established excavation lines;

1. In the channel - The overexcavation shall not cause a slope less than prescribed and in no case will ponding be permitted. At the Government's option concrete may be required.

2. Under areas of concrete surface - The overexcavation shall be filled with concrete and conform to section 4, Concrete.

3. All other. - The overexcavation shall be filled and compacted with select material as approved by the Contracting Officer.

c. Payment - Payment shall be included in the applicable unit price offer in the schedule for excavation.

#### 3.2.4 BLASTING

a. General. - The Contractor is responsible for blasting in a safe manner. The Contractor shall perform blasting where needed, in accordance with the requirements of this paragraph, and the "Reclamation Safety and Health Standards". Where there is a conflict between the requirements of this paragraph and the requirements of the Bureau's publication, "Reclamation Safety and Health Standards," this paragraph shall govern. No blasting will be permitted until the Contractor's submittals have been approved by the Government, and other conditions as required by "Reclamation Safety and Health Standards" have been met.

b. Submittals. - All submittals (RSN C17) for blasting shall be submitted in accordance with the requirements of this paragraph and paragraph 1.1.6 Submittal Requirements.

The Contractor shall submit the following:

(1) Two-part conceptual blasting plan. - 20 days prior to bringing any explosives or blasting agents on the jobsite and to starting any blasting, the Contractor shall submit, for approval, a two-part conceptual blasting plan as follows:

(a) Part 1. - Part 1 of the conceptual plan shall include a complete summary of proposed transportation, handling, storage, and use of explosives, and shall include the names of personnel who will supervise blasting operations, written evidence of past experience and competency, and a minimum of three references for each such person.

(b) Part 2. - Part 2 of the conceptual plan shall include:

(aa) The proposed general concept for the blasting, including individual blasthole and delay patterns and loading diagrams to cover each type of shot anticipated, controlled blasting techniques.

(bb) Material safety data sheets. - The Contractor shall submit completed MSDS (Material Safety Data Sheet), for explosives and other material used for blasting, in accordance with paragraph 1.4.2 (Submission of Material Safety Data Sheets for Hazardous Materials). (RSN-C13)

(2) Individual shot plans. - Individual shot plans shall be submitted on a day-to-day basis for approval. Individual shot plans shall include drilling patterns; number, spacing, location, inclination, diameter, and depth of drilled holes; amount, type, diameter, and distribution of explosive per hole; pounds of explosives per lineal foot for controlled perimeter holes; powder factor; delay patterns, type of initiators, time of each delay, and pounds of explosive for each delay; time of blast; and total pounds of explosives in place at any one time within the area to be excavated under this contract. The

Contractor shall also submit any other data which the Government may deem pertinent to the Government's determination of the Contractor's intent and purpose to produce smooth and sound rock surfaces at the lines of excavation.

Approval of the blasting plans, of all blasting operations, and of blasting products by the Government, and compliance by the Contractor with provisions for protection of life and property shall not relieve the Contractor of the Contractor's responsibility or liability for the safety of persons and property.

The Contractor is responsible for blasting in a safe manner, for producing smooth and sound rock surfaces at the lines of excavation; and for controlling damage and vibration. Approval of the Contractor's submittals by the Government does not constitute nor shall it be construed to be a guarantee by the Government that the desired results will be achieved. Approval by the Government shall not relieve the Contractor from the responsibility of complying with the requirements of these specifications.

c. Blasting procedures. - Drilling for individual blasts shall not be performed until the Contractor's blasting plan has been approved by the Construction Engineer.

The Contractor shall not use blasthole diameters larger than 76 millimeters. Each row of blastholes shall be on a later delay than the row immediately in front of it. The row of holes immediately in front of the perimeter holes shall be delayed by two delay intervals from the proceeding row. To protect rock slopes, the holes at the ends of each row shall be fired on a higher delay than the adjacent holes in that row. Cap and fuse initiation will not be allowed. Electric detonators, delays, and caps will not be allowed if stray electric current exists near the blast area, as determined by the Construction Engineer.

The Construction Engineer or Construction Engineer's representative will observe the drilling and loading of shotholes for excavation blasting to ensure that they are in accordance with approved plans.

The "line drilling" technique involves the use of a single row of unloaded, small-diameter holes usually spaced from two to four times the hole diameter along the final excavation line to provide a plane of weakness to which the primary blast can break. The spacing and loading of the blastholes adjacent to the line holes shall be reduced from the spacing and loading of the main blastholes so as to break the rock between the line holes and produce smooth rock surfaces with a minimum amount of overbreak or tights.

d. Damage and vibration control. - All blasting shall be carefully performed, and any damage to the work, environment, and adjacent property shall be repaired by and at the expense of the Contractor. The Contractor shall be responsible for performing a preblast survey to determine and document the condition of other features within 457.2 meters of the blast area prior to blasting.

All necessary precautions shall be taken to preserve the material below and beyond the established lines of all excavation in the soundest possible condition. The Contractor is responsible for taking proper account of the geology to prevent damage to perimeter rock, concrete, or grout holes resulting from permanent blast-induced rock movements or blast-induced gas pressures. The Construction Engineer or Construction Engineer's

representative will inspect an excavation following the blast and cleanup to determine acceptability. Material beyond the required lines which is shattered or loosened by the Contractor's operations shall be removed by and at the expense of the Contractor. The Contractor shall also immediately adjust its procedures to prevent any further overbreak.

e. Payment. - The payment of all work required by this paragraph shall be included in the applicable prices offered in the schedule for excavation.

**SECTION 3.2.5 DISPOSAL OF EXCAVATED MATERIALS**

a. General. - Material from required excavation shall be wasted by depositing in waste banks in waste areas for excavated material shown on drawing 344-330-14841 or as directed by the Contracting Officer. Disposal of waste material shall also comply with the requirements of paragraph 1.5.8.

Materials shall not be wasted within 4 meters of drainage channels or in wetlands. Materials shall not be wasted by dumping from the top of a natural slope. Waste banks shall be left with reasonably even and uniform surfaces, and shall be graded and shaped to blend with existing contours.

b. Payment. - Except as provided elsewhere in these specifications for payment the cost of all work described in this paragraph shall be included in the prices offered in the schedule for excavation.