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SECTION 01090

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## SECTION 01090

## SOURCES FOR REFERENCE PUBLICATIONS

## PART 1 GENERAL

## 1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the sponsoring organization, e.g.

ASTM B 564 Nickel Alloy Forgings. However, when the sponsoring organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

## 1.2 ORDERING INFORMATION

The addresses of the organizations whose publications are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the sponsoring organization should be ordered from the source by title rather than by number.

## ACI INTERNATIONAL (ACI)

P.O. Box 9094  
Farmington Hills, MI 48333-9094  
Ph: 248-848-3700  
Fax: 248-848-3701  
Internet: <http://www.aci-int.org>  
AOK 6/00

## AGRICULTURAL MARKETING SERVICE (AMS)

Seed Regulatory and Testing Branch  
USDA, AMS, LS Div.  
Room 209, Bldg. 306, BARC-East  
Beltsville, MD 20705-2325  
Ph: 301-504-9430  
Fax: 301-504-8098  
Internet: <http://www.ams.usda.gov/lsg>  
e-mail: [james\\_p\\_tripplitt@usda.gov](mailto:james_p_tripplitt@usda.gov)  
AOK 6/00

## AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)

4301 North Fairfax Dr., Suite 425  
ATTN: Pubs Dept.  
Arlington, VA 22203

Ph: 703-524-8800  
Fax: 703-528-3816  
E-mail: ari@ari.org  
Internet: www.ari.org  
AOK 6/00

## AIR DIFFUSION COUNCIL (ADC)

104 So. Michigan Ave., No. 1500  
Chicago, IL 60603  
Ph: 312-201-0101  
Fax: 312-201-0214  
Internet: www.flexibleduct.org  
AOK 6/00

## AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)

30 W. University Dr.  
Arlington Heights, IL 60004-1893  
Ph: 847-394-0150  
Fax: 847-253-0088  
Internet: www.amca.org  
AOK 6/00

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS  
(AASHTO)

444 N. Capital St., NW, Suite 249  
Washington, DC 20001  
Ph: 800-231-3475 202-624-5800  
Fax: 800-525-5562 202-624-5806  
Internet: www.aashto.org  
AOK 6/00

NOTE: AASHTO documents with numbers beginning with M or T are available only in Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 1998 @\$289.00\X

## AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

One East Wacker Dr., Suite 3100  
Chicago, IL 60601-2001  
Ph: 312-670-2400  
Publications: 800-644-2400  
Fax: 312-670-5403  
Internet: www.aisc.org  
AOK 6/00

## AMERICAN IRON AND STEEL INSTITUTE (AISI)

1101 17th St., NW Suite 1300  
Washington, DC 20036  
Ph: 202-452-7100

AOK 6/00

## AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

11 West 42nd St

New York, NY 10036  
Ph: 212-642-4900  
Fax: 212-398-0023  
Internet: [www.ansi.org/](http://www.ansi.org/)  
Note: Documents beginning with the letter "S" can be ordered from:  
Acoustical Society of America  
P. O. Box 1020  
Sweickley, PA 15143-9998  
Ph: 412-741-1979  
Fax: 412-741-0609  
Internet: [asa.aip.org](http://asa.aip.org)  
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## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9585  
Fax: 610-832-9555  
Internet: [www.astm.org](http://www.astm.org)  
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NOTE: The annual ASTM Book of Standards (66 Vol) is available for \$3500.00. Prices of individual standards vary.

## AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

1791 Tullie Cir., NE  
Atlanta, GA 30329  
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Fax: 404-321-5478  
Internet: <http://www.ashrae.org>  
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## AMERICAN WATER WORKS ASSOCIATION (AWWA)

6666 West Quincy  
Denver, CO 80235  
Ph: 800-926-7337 - 303-794-7711  
Fax: 303-347-0804  
Internet: [www.awwa.org](http://www.awwa.org)  
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## AMERICAN WELDING SOCIETY (AWS)

550 N.W. LeJeune Road  
Miami, FL 33126  
Ph: 800-443-9353 - 305-443-9353  
Fax: 305-443-7559  
Internet: <http://www.amweld.org>  
AOK 6/00

## ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)

1745 Jefferson Davis Highway, Suite 406  
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Ph: 703-412-1153  
Fax: 703-412-1152

ASME INTERNATIONAL (ASME)

Three Park Avenue  
New York, NY 10016-5990  
Ph: 212-591-7722  
Fax: 212-591-7674  
Internet: [www.asme.org](http://www.asme.org)

ASSOCIATED AIR BALANCE COUNCIL (AABC)

1518 K St., NW, Suite 503  
Washington, DC 20005  
Ph: 202-737-0202  
Fax: 202-638-4833

CAST IRON SOIL PIPE INSTITUTE (CISPI)

5959 Shallowford Rd., Suite 419  
Chattanooga, TN 37421  
Ph: 423-892-0137  
Fax: 423-892-0817

CODE OF FEDERAL REGULATIONS (CFR)

Order from:  
Government Printing Office  
Washington, DC 20402  
Ph: 202-512-1800  
Fax: 202-275-7703  
Internet: <http://www.pls.com:8001/his/cfr.html>

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)

933 No. Plum Grove Rd.  
Schaumburg, IL 60173-4758  
Ph: 847-517-1200  
Fax: 847-517-1206  
Internet: <http://www.crsi.org>

COPPER DEVELOPMENT ASSOCIATION (CDA)

260 Madison Ave.  
New York, NY 10016  
Ph: 212-251-7200  
Fax: 212-251-7234  
E-mail: <http://www.copper.org>

CORPS OF ENGINEERS (COE)

Order from:  
U.S. Army Engineer Waterways Experiment Station  
ATTN: Technical Report Distribution Section, Services  
Branch, TIC  
3909 Halls Ferry Rd.

Vicksburg, MS 39180-6199

Ph: 601-634-2571

Fax: 601-634-2506

NOTE: COE Handbook for Concrete and Cement (Documents w/prefix CRD-C) (1949-present; 2 Vol) free to Government offices; \$10.00 plus \$8.00 per yr for 4 qtrly supplements to others). Individual documents, single copies free. Order from address above.

DEPARTMENT OF DEFENSE (DOD)

Order from:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Ph: 703-487-4650

FAX: 703-321-8547

DOOR AND HARDWARE INSTITUTE (DHI)

14170 Newbrook Dr.

Chantilly, VA 20151-2232

Ph: 703-222-2010

Fax: 703-222-2410

Internet: [www.dhi.org](http://www.dhi.org)

E-mail: [techdept@dhi.org](mailto:techdept@dhi.org)

ELECTRONIC INDUSTRIES ALLIANCE (EIA)

2500 Wilson Blvd.

Arlington, VA 22201-3834

Ph: 703-907-7500

Fax: 703-907-7501

Internet: [www.eia.org](http://www.eia.org)

ENGINEERING MANUALS (EM)

USACE Publications Depot

Attn: CEIM-SP-D

2803 52nd Avenue

Hyattsville, MD 20781-1102

Ph: 301-394-0081

ENGINEERING REGULATIONS (ER)

USACE Publications Depot

Attn: CEIM-SP-D 2803 52nd Avenue

Hyattsville, MD 20781-1102

Ph: 301-394-0081

FACTORY MUTUAL ENGINEERING AND RESEARCH (FM)

1151 Boston-Providence Turnpike

P.O. Box 9102

Norwood, MA 02062-9102

Ph: 617-255-4681

Fax: 617-255-4359

Internet: <http://www.factorymutual.com>

FEDERAL SPECIFICATIONS (FS)

Order from:  
General Services Administration  
Federal Supply Service Bureau  
470 L'Enfant Plaza, S.W.  
Washington, DC 20407  
Ph: 202-619-8925  
Fax: 202-619-8978  
Internet: <http://pub.fss.gsa.gov/>

FEDERAL STANDARDS (FED-STD)

Order from:  
General Services Administration  
Federal Supply Service Bureau  
470 E L'Enfant Plaza, S.W.  
Washington, DC 20407  
Ph: 202-619-8925  
Fax: 202-619-8978  
Internet: <http://pub.fss.gsa.gov/>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

445 Hoes Ln, P. O. Box 1331  
Piscataway, NJ 08855-1331  
Ph: 732-981-0060 OR 800-701-4333  
Fax: 732-981-9667  
Internet: <http://www.standards.ieee.org>  
E-mail: [customer.service@ieee.org](mailto:customer.service@ieee.org)

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

5360 Workman Mill Rd.  
Whittier, CA 90601-2298  
Ph: 310-699-0541  
Fax: 310-692-3853

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS  
INDUSTRY (MSS)

127 Park St., NE  
Vienna, VA 22180-4602  
Ph: 703-281-6613  
Fax: 703-281-6671  
Internet: [//cssinfo.com/info/mss/html](http://cssinfo.com/info/mss/html)

MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA)

2017 So. 139th Cir.  
Omaha, NE 68144  
Ph: 402-342-3463  
Fax: 402-330-9702

NATIONAL ASSOCIATION OF PLUMBING-HEATING-COOLING CONTRACTORS  
(NAPHCC)

180 S. Washington Street  
P.O. Box 6808  
Falls Church, VA 22046

Ph: 800-533-7694  
Fax: 703-237-7442

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

1300 N. 17th St., Suite 1847  
Rosslyn, VA 22209  
Ph: 703-841-3200  
Fax: 703-841-3300  
Internet: <http://www.nema.org/>

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

8575 Grovemont Circle  
Gaithersburg, MD 20877-4121  
Ph: 301-977-3698  
Fax: 301-977-9589

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

One Batterymarch Park P.O. Box 9101  
Quincy, MA 02269-9101  
Ph: 800-344-3555  
Fax: 800-593-6372  
Internet: <http://www.nfpa.org>  
NOTE: The complete set of 1997 NFPA National Fire Codes (13 Vol.)  
is available for \$835.00.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

Mail Stop C-13  
4676 Columbia Parkway  
Cincinnati, OH 45226-1998  
Ph: 800-356-4676  
Internet: <http://www.cdc.gov/niosh/homepage.html>  
To order pubs for which a fee is charged, order from:  
Superintendent of Documents  
Government Printing Office  
Washington, DC 20402-9325  
Ph: 202-512-1800  
Fax: 202-512-2250

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

Department of Commerce  
Gaithersburg, MD 20899-0001  
Ph: 301-975-4025  
Fax: 301-926-1630  
Order Publications From:  
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Ph: 202-512-1800  
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National Technical Information Services (NTIS)  
5285 Port Royal Rd.  
Springfield, VA 22161

Ph: 800-553-6847  
Fax: 703-321-8547  
Internet: <http://ww.gov/ntis.gov>

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)

900 Spring St.  
Silver Spring, MD 20910  
Ph: 301-587-1400  
Fax: 301-585-4219

NSF INTERNATIONAL (NSF)

ATTN: Publications  
789 Dixboro Rd.  
P.O. Box 130140  
789 Dixboro Rd.  
Ann Arbor, MI 48113-0140  
Ph: 734-769-8010  
Fax: 734-769-0109  
Toll Free: 800-NSF-MARK  
Internet: [www.nsf.org](http://www.nsf.org)

PLASTIC PIPE AND FITTINGS ASSOCIATION (PPFA)

800 Roosevelt Rd., Bldg C, Suite 20  
Glen Ellyn, IL 60137  
Ph: 630-858-6540  
Fax: 630-790-3095

PLUMBING AND DRAINAGE INSTITUTE (PDI)

45 Bristol Dr., Suite 101.  
South Easton, MA 02375  
Ph: 508-230-3516  
Fax: 508-230-3529  
E-Mail: [pdhw@tiac.net](mailto:pdhw@tiac.net)

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)

175 West Jackson Blvd., Suite 1859  
Chicago, IL 60604  
Ph: 312-786-0300  
Fax: 312-786-0353  
Internet: [www.pci.org](http://www.pci.org)  
e-mail: [info@pci.org](mailto:info@pci.org)

SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION  
(SMACNA)

4201 Lafayette Center Dr.,  
Chantilly, VA 20151-1209  
Ph: 703-803-2980  
Fax: 703-803-3732

Internet: <http://www.smacna.org>

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

400 Commonwealth Dr.  
Warrendale, PA 15096-0001  
Ph: 724-776-4841  
Fax: 724-776-5760  
Internet: <http://www.sae.org>  
e-mail: [publications@sae.org](mailto:publications@sae.org)

STEEL DOOR INSTITUTE (SDOI)

30200 Detroit Rd.  
Cleveland, OH 44145-1967  
Ph: 216-899-0010  
Fax: 216-892-1404

TILE COUNCIL OF AMERICA (TCA)

P.O. Box 1787  
Clemson, SC 29633-1787  
Ph: 864-646-8453  
FAX: 864-646-2821

UNDERWRITERS LABORATORIES (UL)

333 Pfingsten Rd.  
Northbrook, IL 60062-2096  
Ph: 847-272-8800  
Fax: 847-272-8129  
Internet: <http://www.ul.com/>

Note: First price is for the standard only. Second price is for the standard including the Revision Subscription Service.

UNI-BELL PVC PIPE ASSOCIATION (UBPPA)

2655 Villa Creek Dr., Suite 155  
Dallas, TX 75234  
Ph: 214-243-3902  
Fax: 214-243-3907

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## SECTION 01200

## GENERAL REQUIREMENTS

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## SECTION 01200

## GENERAL REQUIREMENTS

## 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.

## ENGINEERING MANUALS (EM)

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

## FEDERAL SPECIFICATIONS (FS)

FS FF-B-575 (Rev C) Bolts, Hexagon and Square  
FS FF-N-105 (Rev B; Am 3 Int Am 4) Nails, Brads, Staples and Spikes: Wire, Cut and Wrought  
FS FF-N-836 (Rev B; Am 2) Nut: Square, Hexagon, Cap, Slotted, Castle, Knurled, Welding and Single Ball Seat  
FS MM-L-751 (Rev H) Lumber; Softwood  
FS TT-E-529 (Rev D) Enamel, Alkyd, Semi-Gloss  
FS TT-P-25 (Rev E; Am 2) Primer Coating, Exterior (Undercoat for Wood, Ready-Mixed, White and Tints)

## NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST PS 1 (1983) Construction and Industrial Plywood

## 1.2 SUBMITTALS

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

SD-01 Preconstruction Submittals

Location of Contractor's Office

SD-02 Shop Drawings

Temporary Access and Haul Roads; G.

### 1.3 CONSTRUCTION SIGNS

The Contractor shall construct and/or erect the following signs. The signs shall be erected as soon as possible and within 15 days after commencement of work under this contract.

#### 1.3.1 Construction Signs Shall Meet The Following Material Requirements

- a. Lumber shall conform to FS MM-L-751, and shall be seasoned Douglas Fir, S4S, Grade D or better except that posts, braces and spacers shall be construction Grade (WCLB).
- b. Plywood shall conform to NIST PS 1, grade A-C, Group 1, exterior type.
- c. Bolts, Nuts and Nails. Bolts shall conform to FS FF-B-575, nuts shall conform to FS FF-N-836, and nails shall conform to FS FF-N-105.
- d. Paints and Oils. Paints shall conform to FS TT-P-25 for primer and FS TT-E-529 for finish paint and lettering.

#### 1.3.2 The Following Construction Signs Shall Be Constructed

- a. One project sign at location designated by the Contracting Officer. The project sign shall be constructed as detailed in Figure 1 and Figure 2.
- b. Eight hard hat signs at locations directed. Hard hat signs shall be constructed as detailed in Figure 3. Decals and safety signs will be furnished by the Contracting Officer.
- c. Warning Signs facing approaching traffic on all haul roads crossing under overhead power transmission lines.
- d. Warning Signs shall be constructed of plywood not less than ½ inch thick and shall be securely bolted to the supports with the bottom of the sign face 3 feet above the ground. The sign face shall be 2 x 4 feet and all letters shall be 4 inches in height. The text of the "Powerline" warning signs shall be "WARNING: OVERHEAD TRANSMISSION LINES".
- e. Warning signs shall be placed indicating that explosives are being used in the area at locations designated by the Contracting Officer. The text of the "Explosives" warning signs shall be "WARNING: EXPLOSIVES BEING USED IN AREA".

#### 1.3.3 Painting

All exposed surfaces and edges of plywood shall be given one coat of linseed oil and be wiped prior to applying primer. All exposed surfaces of signs and supports shall be given one coat of primer and 2 finish coats of white paint. Except as otherwise indicated, lettering on all signs shall be black and sized as indicated.

#### 1.3.4 Bulletin Board at the Contractor's Office

A weatherproof bulletin board, approximately 36 inches wide and 30 inches high, with hinged glass door shall be provided adjacent to or mounted on the Contractor's project office. If adjacent to the office, the bulletin board shall be securely mounted on no less than 2 posts. Bulletin board and posts shall be painted or have other approved factory finish. The bulletin board shall be easily accessible at all times and shall contain wage rates, equal opportunity notice, and such other items required to be posted

#### 1.4 LOCATION OF CONTRACTOR'S OFFICE

Location of the Contractor's Office shall be approved by the Contracting Officer. The Contractor's job site office shall be located so that people visiting, such as salespersons or personnel seeking employment, will not have to enter the work area to get to the office. No parking of private vehicles shall be permitted in the working areas except as otherwise approved. At approved locations, adequate parking areas shall be constructed for the Contractor's and subcontractor's employees. The office site and parking areas shall be adequately drained and have suitable access.

#### 1.5 MAINTENANCE OF PROJECT FACILITIES

The Contractor shall maintain project facilities in good condition throughout the life of the project. Upon completion of work under this contract, facilities covered under this section will remain the property of the Government.

##### 1.5.1 General

The Contractor shall be responsible for maintaining all project facilities, including the existing Prado Dam Resident Office and the laboratory buildings.

##### 1.5.2 Maintenance Requirements

Maintenance of the project facilities shall include daily janitorial service, including cleaning of tile floors and washing of windows twice a month. Toilet facilities shall be kept clean and sanitary and fully supplied at all times. All janitorial services shall be performed at such a time and in such manner to least interfere with the use of the Government facilities, but only during periods when the building and trailers are occupied. Maintenance includes providing potable bottled water service, trash removal, servicing of sewage tank, monthly air conditioning service, and the payment of monthly billings associated with these utilities and services with the exception of the telephone and power billings. The project facilities shall be kept clear of debris. Trash service shall also be provided (3 cy trash dumpster with weekly pickups). The Contractor shall remove and dispose of all broken test cylinders from the testing laboratory bi-weekly. Any required replacement and/or repairs for the project facilities or grounds shall be performed by the Contractor at no additional cost to the Government. Maintenance shall also include bi-annual pest control service for all buildings and trailers.

#### 1.6 SECURITY GUARD SERVICE

The Contractor shall provide 24 hour a day, seven day a week security guard service for the Prado Dam construction site. The security guard service shall perform hourly checks of various locations throughout the project

site, as directed by the Contracting Officer, to assure overall security and prevent vandalism and theft during non duty hours. A security guard shall be assigned to control the entrance gate to Prado Dam.

#### 1.7 PROTECTION OF EXISTING WORK

Before beginning any cutting or removal work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to insure against damage to existing work to remain in place, to be reused, or to remain the property of the Government, and any damage to such work shall be repaired or replaced as approved by the Contracting Officer at no additional cost to the Government. The Contractor shall carefully coordinate the work of this section with all other work and construct and maintain shoring, bracing and supports, as required. The Contractor shall insure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this Contract.

#### 1.8 PUBLIC UTILITIES, NOTICES, AND RESTRICTIONS

##### 1.8.1 General

The approximate location of all pipe lines, power and communication lines, and other utilities known to exist within the limits of the work are indicated on the drawings. The sizes, locations, and names of owners of such utilities are given from available information, but their accuracy is not guaranteed. Except as otherwise indicated on the drawings, all existing utilities will be left in place and the Contractor shall conduct his operations in such a manner that the utilities will be protected from damage at all times, or arrangements shall be made by the Contractor for their relocation at the Contractor's own expense. The Contractor shall be responsible for any damage to utilities known to exist and shall reimburse the owners for such damage caused by his operations.

##### 1.8.2 Relocation or Removal

Utilities to be relocated or removed not as part of this contract are designated "To be Relocated by Others" or "To be Removed by Others", respectively. Utilities shown on the plans and not so designated will be left in place and be subject to the provisions of the CONTRACT CLAUSE: PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS. The Contractor may make arrangements with the owner for the temporary relocation and restoration of utilities not designated to be relocated, or for additional work in excess of the work needed to relocate utilities designated for relocation at no additional cost to the Government.

##### 1.8.3 Utilities Not Shown

If the Contractor encounters, within the construction limits of the entire project, utilities not shown on the plans and not visible as of the date of this contract and if such utilities will interfere with construction operations, he shall immediately notify the Contracting Officer in writing to enable a determination by the Contracting Officer as to the necessity for removal or relocation. If such utilities are left in place, removed or relocated, as directed by the Contracting Officer, the Contractor shall be entitled to an equitable adjustment for any additional work or delay.

#### 1.8.4 Coordination

The Contractor shall consult and cooperate with the owner of utilities that are to be relocated or removed by others to establish a mutual performance schedule and to enable coordination of such work with the construction work. These consultations shall be held as soon as possible after award of the contract or sufficiently in advance of anticipated interference with construction operations to provide required time for the removal or relocation of affected utilities.

The Contractor shall be responsible for coordinating their activities with other contractors performing work in the area. This shall include, but is not limited to, coordination with Caltrans and their Contractor for work on the Highway 71 bridge crossing the Santa Ana River and the future expansion of the 71/91 interchange.

The Contractor shall be responsible to coordinate with the United States Geological Survey (USGS) for the removal of instruments within the seismic sheds. The USGS contact for removal of the instruments at Prado Dam is:

Mr. Arnie Acosta  
Telephone: (626) 583-7234  
Pager: (818) 542-4638

or

Edna Anjal  
Telephone: (626) 583-7235

USGS shall be notified a minimum of 30 days prior to the removal of the seismic sheds. The Contractor shall not attempt to remove any of the instruments and associated hardware, however, what remains shall become the property of the contractor for removal and disposal.

#### 1.8.5 Notices

##### 1.8.5.1 Utilities to be Relocated or Protected

The Contractor shall notify the Contracting Officer, in writing, 14 calendar days prior to starting work on any utility to be relocated or protected. On each relocation, notification shall include dates on which the Contractor plans excavation, by-pass work, removal work and/or installation work, as applicable. The Contractor shall also notify the following representatives of utility owners not less than 30 days, unless otherwise specified, prior to start of work in the vicinity of their respective utilities:

Southern California Gas Company  
Mr. Tim Pearce  
Telephone: (213) 244-2269

Southern California Edison Company  
Mr. Bob Patterson  
Telephone: (909) 930-8432

Santa Ana Watershed Project Authority (For SARI sewer)  
Mr. Richard Smith  
Telephone (909) 785-5411

#### 1.8.5.2 Telephone Lines

The Contractor shall notify, 60 calendar days prior to permanent installation of all telephone lines.

#### 1.8.5.3 Contractor Shall Notify the Contracting Officer

The Contractor shall notify the Contracting Officer, in writing, not less than 14 days in advance of the date on which he will complete trenching, excavation, fill or rough grading, as applicable, at each location where such completed work is required for temporary or permanent relocations by others. The Contractor shall allow a period of 14 calendar days at each relocation, after which time the Contractor may resume his operations.

#### 1.8.5.4 Existing Bench Marks and R/W Markers

The Contractor shall notify the Contracting Officer, in writing, 7 days in advance of the time he proposes to remove any bench mark or right-of-way marker.

#### 1.8.5.5 Spill Reporting

The Contractor shall notify the Contracting Officer immediately after all spills, regardless of quantity, including all personnel exposures. The Contractor shall submit a written notification not later than 7 calendar days after the initial notification. The written notification shall include the following:

- a. Item spilled, leaked or releases in an unauthorized manner (Identification, Quantity and Manifest Numbers).
- b. Whether the amount spilled, leaked or released in an unauthorized manner is EPA reportable and, if reported, a copy of the report.
- c. Exact location of the spill, leak or unauthorized release.
- d. Nature of exposure to personnel.
- e. Containment procedures initiated.
- f. Anticipated cleanup and disposal procedures.
- g. Disposal location of spill, leak or unauthorized release residue.

#### 1.8.6 Restrictions

##### 1.8.6.1 Representatives of Other Agencies

Personnel representing owners and agencies may be present for various portions of the work. However, the Contractor will be responsible only to the Contracting Officer.

##### 1.8.6.2 Working Hours

The Contractor shall restrict all construction activities, including warming equipment, to the following schedule:

Monday through Friday	7 a.m. to 7 p.m.
Saturday	9 a.m. to 6 p.m.

Access to the job site will be allowed 30 minutes prior to starting time unless otherwise approved by the Contracting Officer. No work will be permitted on Sundays or Federal Holidays.

#### 1.8.6.3 Water for Construction

Reference is made to the clause of the contract entitled "Permits and Responsibilities," which obligates the Contractor to obtain all required licenses and permits for construction, including water for construction. The Contractor shall be responsible for obtaining and paying all costs and fees associated with the acquisition of water for construction. Water rights within the Prado Basin are owned by the Orange County Water District (OCWD). The Contractor shall not intercept existing surface or subsurface flows at any time during the contract performance period. All water from dewatering shall be returned to the streambed. Additionally, water from the water well shown on the drawings to be constructed by this contract can not be used by Contractor for any purpose.

### 1.9 ROADS AND CULVERTS

#### 1.9.1 Existing Roads

The work shall be planned in such a manner that traffic on the existing roads outside the actual construction areas shall be maintained at all times. Maintenance shall be as specified in paragraph: Maintenance of Roads. The work area shall be examined carefully relative to the order and scope of work to be performed, with respect to the limiting provisions of the plans and specifications. Additional work on the existing roads may be done by others during the life of this contract.

##### 1.9.1.1 Existing Sound Walls

The Contractor is responsible for maintaining required noise levels as stated in 01410 ENVIRONMENTAL PROTECTION.

#### 1.9.2 Temporary Access and Haul Roads

Plans shall be submitted for approval on all proposed access and haul roads and all deviations, whether within or outside the limits of the construction area, at least fifteen (15) calendar days prior to construction of such roads. The plans shall indicate width of road, direction of traffic, road markings, type of guardrail, curves, grades, runouts, and other information in sufficient detail for studying safety of the proposed roads. The plans shall include details for removal and obliteration of haul roads and temporary access roads and restoration of the area as specified in paragraph: Post-Construction Cleanup and Obliteration.

##### 1.9.2.1 Haul Road Design References

Design of haul roads shall meet or exceed the requirements of the Corps of Engineers Safety and Health Requirement Manual, Section 30.D (EM 385-1-1). An applicable design guide is the Surface Mine Haulage Road Design Study by Skelly and Loy of Harrisburg, PA, prepared for the Bureau of Mines, Washington, DC, dated June 1976.

##### 1.9.2.2 Haul Road Design

Roads shall be designed for the type of vehicles in use. The maximum sustained grade shall not exceed 10% with an absolute maximum grade of 15% for a distance not to exceed 200 linear feet. Each lane of travel shall provide clearance that is equal to one-half of the widest vehicle in use (a 12 ft. wide vehicle will require a 24 ft. travel lane). The minimum horizontal curve radius shall not be less than 25 ft. on the inside of the curve. Vertical curves shall be a minimum of 100 ft. and be designed with consideration of the change in grades, height of the driver's eyes, height of an object a minimum of 6 inches above the road surface, and required stopping distance. Curve widening, proper cross slopes and superelevations shall be provided as necessary. Road ditches and culverts shall be included to control surface drainage away from erodible areas. Culverts shall be provided along natural water courses intersected by the haul road fill and shall be maintained as specified in paragraph: Culverts. Design shall also include provisions to control runaway vehicles on steep grades such as an escape lane. Design shall be subject to the Contracting Officer's approval.

#### 1.9.3 Public and Private Access Roads

When it is necessary for heavy equipment to operate on or to cross project roads or arterial roads, flaggers, signs, lights, and/or other necessary safeguards shall be furnished to safely control and direct the flow of traffic. When it is necessary to operate on existing roads outside the construction area, all necessary permits shall be obtained from the appropriate private or public authority. Work shall be conducted in such manner so as to obstruct and inconvenience traffic on existing roads outside the construction limits as little as possible. Spillage of earth, dusty materials, boulders, and mud on project roads or other roads shall not be permitted. If spillage cannot be prevented, the spillage shall be immediately removed and such areas shall be kept clear throughout the workday. At the conclusion of each workday, such traveled areas shall be cleared of spillage, boulders, and mud.

#### 1.9.4 Maintenance of Roads

All roads shall be maintained regularly to provide vehicular access for the Government's vehicles and the Contractor's vehicles and equipment during the contract performance period. Road maintenance shall include: clearing and disposal of rock/mud slides on the roads and drainage ditches, repair of washouts, repair of potholes and ruts, regrading, and any incident which would restrict vehicular/equipment access. Prior to any alterations of any road alignment the Contractor shall receive approval from the Contracting Officer. Road maintenance and alterations shall be performed by the Contractor at no additional cost to the Government.

#### 1.9.5 Temporary Culverts

Culverts shall be provided as required for road drainage. Culverts shall be corrugated metal pipe of adequate diameter. Dump stone or other energy dissipating structures shall be provided at all outlets of culverts to prevent undermining of pipe. Exact locations of the culverts shall be subject to approval by the Contracting Officer.

##### 1.9.5.1 Culvert Maintenance

All culverts within the construction area, including the borrow areas, shall be maintained to provide unrestricted flow through the culverts. Culvert maintenance shall include debris cleaning, repair of failures, and

extension of culverts due to road alterations. Culvert maintenance shall be performed by the Contractor at no additional cost to the Government.

#### 1.10 TRAFFIC SAFETY

##### 1.10.1 Warning Devices

In accordance with Contract Clause ACCIDENT PREVENTION, signs, barricades, and warning devices shall be provided, installed, and maintained as are required for protection of vehicular traffic at any location where operations interfere with public or private roads. Signs, barricades, lights, and signals shall be in conformance with Part VI of the U.S. Department of Transportation Manual on Uniform Traffic Control Devices for Streets and Highways.

##### 1.10.2 Rock and Gravel

Rock and gravel for use on haul roads and other facilities may be obtained from any source within the excavation limits or stockpiles within the project boundaries not designated for other use. The use of any such source shall be subject to approval by the Contracting Officer.

#### 1.11 WATER CONTAMINATION

In order to prevent contamination of water along waterways, all refuse, oil, greases, and other petroleum products; all toxic materials; all cement or concrete; or water containing such materials shall be disposed of in a manner to prevent their entry into the water along waterways.

#### 1.12 SCRAP MATERIAL

Materials indicated to be removed and not indicated to be salvaged, stored or reinstalled are designated as scrap and shall become the property of the Contractor and be removed from the site of work. The Contractor by signing this contract hereby acknowledges that he made due allowance for value, if any, of such scrap in the contract price.

#### 1.13 ARCHAEOLOGICAL FINDINGS DURING CONSTRUCTION

Should the Contractor or any of his employees in the performance of this contract find or uncover any archaeological remains, he shall notify the Project Engineer immediately. Such notification will be a brief statement in writing giving the location and nature of the findings. Should the discovery site require archaeological studies resulting in delays and/or additional work, the Contractor will be compensated by an equitable adjustment under the General Provisions of the contract.

#### 1.14 POST-CONSTRUCTION CLEANUP AND OBLITERATION

The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, access roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction as directed by the Contracting Officer. Excavation, filling, regrading and plowing of roadways and other construction areas will require the areas to be restored to near natural conditions, which will permit the growth of vegetation thereon. The disturbed areas shall be graded and filled as required, and the areas scarified prior to placement of soil covering for hydroseeding.

## 1.15 PERMITS

## 1.15.1 General

Reference is made to the clause of the contract entitled "Permits and Responsibilities," which obligates the Contractor to obtain all required licenses and permits, including, but not necessarily limited to the following specified hereinbelow.

## 1.15.1.1 National Pollutant Discharge Elimination System (NPDES) Permit

The project requires an NPDES permit from the California State Water Resources Control Board, Division of Water Quality. The general permit requires development and implementation of Storm Water Pollution Prevention Plan (SWPPP) , which shall be maintained on-site throughout the construction period. A copy of a plan will be furnished to the Contractor by the Government. The Contractor shall maintain a current copy of the plan on-site, and shall comply with all provisions of the plan. Modifications to the plan as necessary to reflect Contractor's construction methods shall be submitted by the Contractor to the Government for approval.

## 1.15.2 Encroachment Permit and Traffic Detour Plan

The project has been designed to avoid construction on the shoulder and traveled way of the State Route 71. The Contractor is responsible for obtaining all permits for work on or around the SR 71 roadway. Information for an encroachment permit to implement a closure of the highway shoulder can be obtained at:

Office of Permits  
Department of Transportation  
464 W. Fourth Street, 6th Floor, MS 619  
San Bernardino, CA 92401-1400  
(909) 383-4536

Information for a traffic detour plan can be obtained at:

Operations Division  
Department of Transportation  
464 W. Fourth Street, 6th Floor, MS 619  
San Bernardino, CA 92401-1400  
(909) 383-5979

## 1.16 REQUIRED INSURANCE

## 1.16.1 General

The Contractor shall maintain insurance in full force and effect throughout the term of this contract. The policy or policies of insurance maintained by the Contractor shall provide the limits and coverages as set forth herein below.

## 1.16.2 Insurance

Insurance shall be in force the first day of the term of this contract.

## 1.16.3 Insurance Policy

Each insurance policy required by this contract shall contain the following

three clauses:

- a. "This insurance shall not be canceled, limited in scope of coverage or non-renewed until after 30 days written notice has been given to (1) Riverside County Flood Control and Water Conservation District, Attn: Steve Thomas, 1995 Market Street, P.O. Box 1033, Riverside, CA 92502-1033, (2) San Bernardino County Flood Control District, Attn: Vana Olsen, 825 East Third Street, San Bernardino, CA 92415-0835, and (3) Orange County Public Facilities and Resources Department, Attn: Herb Nakasone, 300 North Flower Street., P.O. Box 4048, Santa Ana, CA 92702-4048.
- b. "All rights of subrogation are hereby waived against the County of Riverside, San Bernardino, and Orange and the members of the Board of Supervisors and elective or appointive officers or employees, when acting within the scope of their employment or appointment, and County Districts and their Board or Commissions which are governed by the County Board of Supervisors".
- c. "As respects operation of the named insured performed on behalf of the Government, the following are added as additional insureds:
  - 1. The San Bernardino County Flood Control District, County of San Bernardino, Orange County Public Facilities and Resources Department, County of Orange, Riverside County Flood Control and Water Conservation District, and the County of Riverside.
- d. "It is agreed that any insurance maintained by the Orange County Public Facilities and Resources Department, and the County of Orange will apply in excess of, and not contribute with, insurance provided by this policy.

LIABILITY INSURANCE

COVERAGE	MINIMUM LIMITS
Comprehensive General Liability single limit including Completed Operation and a Broad Form Property Endorsement and Comprehensive Automobile Liability	\$10,000,000 combined  per occurrence.
Worker's Compensation	Statutory

1.16.4 Liability Insurance

Any liability insurance required by this contract shall not contain exclusions or endorsements which eliminate or limit coverage for the following:

- a. Claims of liability for bodily injury or property damage caused by, resulting from, attributable or contributed to, or aggravated by the subsidence or other movement of soils or land as a result of landslide, consolidation, expansion, creep, shifting, sinking, or mud flow;
- b. Claims of liability for bodily injury or property damage caused by, resulting from, attributable or contributed to, or aggravated

by the actual, alleged, or threatened discharge, dispersal, release or escape of any pollutants;

- c. Completed Operations coverage;
- d. Products coverage;
- e. Broad Form Property Damage coverage;
- f. Blanket Contractual coverage.

#### 1.16.5 Fire and Extended Coverage

The Contractor shall purchase a course of construction property insurance policy to cover structures (excluding reinforced concrete structures) being built under the terms of this contract to at least 90 percent of their replacement cost. As a minimum, coverage shall be provided for replacement cost and for fire and the extended coverage perils.

#### 1.16.6 Worker's Compensation

Each liability and worker's compensation insurance policy required by this contract shall contain clause numbers 12.3 (a.) and 12.3 (c.) above, and the following clause: "It is agreed that any insurance maintained by the County of Riverside, San Bernardino, and Orange will apply in excess of, and not contribute with, insurance provided by this policy."

##### 1.16.6.1 Procuring of Required Policy

The procuring of such required policy or policies of insurance shall not be construed to limit Contractor's liability hereunder not to fulfill the indemnification provisions and requirements of this contract.

##### 1.16.6.2 Contractor Agrees to Indemnify

Contractor agrees to indemnify and save harmless agency, its officers, employees, agents and volunteers from and against any and all claims, actions, losses, damages and/or liability arising out of this contract from any cause whatsoever, including the acts, errors or omissions of any person, except where such indemnification is prohibited by law.

#### 1.17 PROGRESS PAYMENTS

##### 1.17.1 Partial Pay Estimates

Partial pay estimates shall be submitted every month. The following items shall be submitted with the partial pay estimates to ensure prompt payment:

- a. Project schedule Narrative and Earnings Monthly update reports as specified in Section 01320 PROJECT SCHEDULE, paragraph: Contractor Prepared Network Analysis System (NAS).
- b. Safety report(s) in accordance with OSHA, CALOSHA, and the Corps of Engineers' EM 385-1-1.
- c. Updated/current submittal register as specified in Section 01330 SUBMITTAL PROCEDURES, paragraph: Submittal Register (ENG FORM 4288).

- d. Quality Control Reports as specified in Section 01451 CONTRACTOR QUALITY CONTROL, paragraph: Documentation.
- e. Updated forecasting of expenditure worksheets as specified in the paragraph below

#### 1.17.2 Forecasting of Future Progress Payments

By July 15th of each year, the Contractor shall give the Contracting Officer the projected monthly earnings for the upcoming fiscal year (fiscal year begins in November). The Contracting Officer will provide a spreadsheet to the Contractor showing the different funding categories and their respective percentages for each bid item for the total contract amount after the issuance of notice to proceed (See attached FIGURE 5). Similar accounting information will be contained in any subsequent contract modification issued for this contract. Each pay period the Contractor shall forecast his expenditures for the following 3 pay periods, indicating the funding requirement for each accounting category. The updated worksheet (see FIGURE 6) shall be submitted with each partial pay estimate (e.g., submittal for partial pay estimate for the period of 15 DEC to 15 JAN will include a forecast of expenditures for the period of 15 JAN to 15 APR). Forecasting of expenditures is needed to assure sufficient funding for future progress payments. If the contractor's actual earnings for any particular partial pay estimate exceed the funding available for payment due to inaccurate submittal of forecast expenditures, the contracting office can reject the contractor's invoice as defective, and require the contractor to resubmit the invoice of an amount not exceeding the previously submitted forecast amounts.

#### 1.18 NOTICE OF PARTNERSHIP

The Government intends to encourage the foundation of a cohesive partnership with the Contractor and its subcontractors. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and intended to achieve completion within budget, on schedule, and in accordance with plans and specifications; and to develop a single cooperative management team focused on the success of the project to mutual benefit of all stakeholders. This partnership would be bilateral in makeup, and participation will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price. An integral aspect of partnering is the resolution of disputes in a timely, professional, and non-adversarial manner through the use of issue clarification and problem solving. Alternate Dispute Resolution (ADR) methodologies will be encouraged in place of more formal dispute resolution procedures. ADR will assist in promoting and maintaining an amicable working relationship to preserve the partnership. ADR is a voluntary, nonbinding procedure available for use by the parties to this contract to resolve any dispute that may arise during performance. To implement this partnership initiative it is anticipated that within 60 days of Notice to Proceed the Contractor's on-site project manager and the Government's Resident Engineer would attend a two day partnership development seminar/team building workshop together with the Contractor's key on-site staff and key Government personnel. Follow-up workshops of 1 to 2 days duration would be held periodically throughout the duration of the contract as agreed to by the Contractor and Government.

#### 1.19 ALTERNATIVE DISPUTES REVIEW PROCESS

In order to assist in the resolution of disputes or claims arising out of this project, this contract clause establishes an Alternative Disputes Review process. A Disputes Review Board will, by mutual agreement of the parties and in accordance with this clause, be established but is not intended to be a substitute for normal negotiated Government and Contractor dispute resolution. The parties shall establish the Board within 90 calendar days after the Notice to Proceed as set forth in Attachment 1. The Disputes Review Board will consider disputes referred to it and will provide non-binding recommendations to assist in the resolution of the differences between the Government and Contractor. The following alternative procedure may be used for dispute resolution. Specific procedures to be followed for disputes referred to the Disputes Review Board are set forth as attachments to this provision.

If the Contractor objects to any oral decision or order of the Contracting Officer or his Authorized Representative(s), the Contractor shall request in writing a written decision or order from the Government. Such request is not considered a dispute for purposes of the Contract Disputes Act.

After receipt of the Government's written decision or order the Contractor shall, if there is an objection to such decision or order, file a written protest with the Government, stating clearly and in detail the basis of the objection. The Government will consider any written protest and make a decision within 15 days from receipt of the written protest either agreeing or disagreeing with the protest. If there is not complete agreement, the matter can either be referred to the Disputes Review Board by mutual agreement of the Government and the Contractor, or the Contractor may request that the Contracting Officer issue a final decision on the matter, from which the contractor may pursue an appeal in accordance with the "Disputes" clause of the contract.

In the event the Government and the Contractor mutually agree to submit the dispute to the Disputes Review Board, the request for review must be instituted within 30 days of the date of receipt of the Government's last decision. Pending review by the Disputes Review Board of a dispute, the Contractor shall diligently proceed with the work as previously directed.

The Contractor and the Government shall each be afforded an opportunity to be heard by the Disputes Review Board and to offer evidence. The Disputes Review Board recommendations toward resolution of a dispute will be given in writing to both the Government and the Contractor within 30 days following conclusion of the proceedings before the Disputes Review Board.

Within 30 days of receiving the Dispute Review Board's recommendations, both the Government and the Contractor shall respond to the other in writing signifying that the dispute is either resolved or remains unresolved. If the Government and the Contractor are able to resolve their dispute, the Government will expeditiously process any required contract modifications. Should the dispute remain unresolved after 30 days following receipt of the Board's recommendations, the Contractor may submit a request for a Contracting Officer's decision under the "Disputes" clause of the contract.

The attached information at the end of this section forms a part of this Special Clause. The Alternative Disputes Review Process (Attachment 1) describes the purpose and function of the Disputes Review Board. The Disputes Review Board Three Party Agreement which sets out the terms between the parties (Attachment 2) must be completed and signed by both

parties in accordance with the conditions in that Agreement. The Contract Disputes Review Board Guidelines (Attachment 3) set forth the objective and responsibility of the Disputes Review Board. These attachments set out all the guidelines for this Special Clause providing an alternative disputes review process.

PART 2 PRODUCTS (NOT APPPLICABLE)

PART 3 EXECUTION (NOT APPPLICABLE)

## ALTERNATIVE DISPUTES REVIEW PROCESS - ATTACHMENT 1

## DISPUTES REVIEW BOARD

## 1. Purpose.

The Disputes Review Board is an advisory body which may be created by mutual agreement of the Government and the Contractor for a particular construction project. The Board's function will be to assist in the resolution of claims, disputes or controversy between the Contractor and the Government. Any recommendations made by the Board will be advisory, and will not be binding upon either party.

## 2. General.

a. Definition. The Disputes Review Board process is a voluntary, expedited procedure, whereby an independent three-party Board is established to evaluate contract disputes and provide recommendations to the Government and its Contractor with the objective of resolving disputes.

b. The Board will consider disputes referred to it, and will furnish recommendations to the Government and Contractor to assist in the resolution of the differences between them. The Board will provide technical expertise to assist and facilitate the resolution of disputes.

## 3. Board Membership.

a. The Disputes Review Board shall consist of three individuals respected in the field of engineering for their ability and integrity, who are experienced with the processes anticipated to be used to construct the project: one member shall be selected by the Government; one member shall be selected by the Contractor; and, one member shall be selected by these first two members. The first two members shall be mutually acceptable to both the Government and the Contractor. If the two parties are unable to agree on these first two members, the mutual decision to submit disputes to a Disputes Review Board shall be considered terminated.

b. The two members acceptable to the Government and the Contractor will independently select the third member. If the two members are unable to select an acceptable third member, the decision to submit disputes to a Disputes Review Board shall be considered terminated.

c. No member shall have a financial interest in the contract, except for payment for services on the Disputes Review Board. Except for fee-based consulting services on other projects, no Board member shall have been employed by either party within a period of two years prior to award of the contract. No member shall have had substantial prior involvement in the project that could compromise his ability to impartially participate in the Board's activities.

## 4. Selection of the Disputes Review Board Procedure.

If the parties mutually agree that a Disputes Review Board should be established for work performed under a contract, the Government and the Contractor shall negotiate an agreement with their member within 60 calendar days after execution of the contract. The selection of the Disputes Review Board Alternative Disputes Review procedure for resolution of contract disputes shall be void if the two members are unable to select a third member

within 30 calendar days.

5. Procedure for Submitting Dispute to the Board.

a. If the Contractor objects to any oral decision or order of the Contracting Officer or his Authorized Representative(s), the Contractor shall request in writing a written decision or order from the Government.

b. After receipt of the Government's written decision or order the Contractor shall, if there is an objection to such decision or order, file a written protest with the Government, stating clearly and in detail the basis of the objection. The Government will consider any written protest and make a decision within 15 days from receipt of the written protest either agreeing or disagreeing with the protest. If there is not complete agreement, the matter can either be referred to the Disputes Review Board by mutual agreement of the Government and the Contractor, or the Contractor may request that the Contracting Officer issue a final decision on the matter, from which the Contractor may pursue an appeal in accordance with the "Disputes" clause of the contract.

c. In the event the Government and Contractor mutually agree to submit the dispute to the Disputes Review Board, the request for review must be instituted within 30 days of the date of receipt of the Government's last decision. Pending review of the Disputes Review Board of a dispute, the Contractor shall diligently proceed with the work as previously directed.

d. The Contractor and the Government shall each be afforded an opportunity to be heard by the Disputes Review Board and to offer evidence. The Disputes Review Board shall submit in writing recommendations towards factual (as opposed to legal) resolution of a dispute to both the Government and the Contractor within 30 days following conclusion of the proceedings before the Disputes Review Board.

e. Within 30 days of receiving the Dispute Review Board's factual recommendations, both the Government and the Contractor shall respond to the other in writing signifying that the dispute is either resolved or remains unresolved. If the Government and the Contractor are able to resolve their dispute, the Government will expeditiously process any required contract modifications. Failure of either party to respond within 30 days following the receipt of the Board's recommendations will be deemed acceptance of the Board's recommendations.

f. In appropriate cases the Contractor and the Government may agree that a dispute should be submitted to the Disputes Review Board, but that the dispute only warrants the efforts of one Board Member. In such cases the third Board Member will mediate the dispute without participation of the other two members. Other than submitting the dispute to only the third Board Member, the procedural requirements of the Alternative Disputes Review Board Process as set forth in paragraph 7a-e above will be followed.

6. Board Procedures.

a. The Disputes Review Board will formulate its own rules of operation. In order to keep abreast of construction progress, it is recommended that the members, as a Board, will visit the project at least quarterly, keep a current file and regularly meet with representatives of the Government and the Contractor. More frequent than quarterly site visits shall be as agreed between the Government, the Contractor and the Board. The Board should take these opportunities to make recommendations to either or

both, the Government and the Contractor to facilitate the construction and/or prevent problems from occurring.

b. Should the need arise to appoint a replacement Board member, the replacement member shall be appointed in the same manner as the original Board members were appointed. The selection of a replacement Board member shall begin promptly upon notification of the necessity for a replacement, and shall be completed within 30 calendar days. The Disputes Board Three Party Agreement will be supplemented to indicate changes in Board membership.

c. For further description of work, responsibilities and duties of the Disputes Review Board, and the Government and Contractor's obligations and responsibilities with respect to each other and to the Disputes Review Board, see the "Disputes Board Three Party Agreement" as set forth in attachment 2.

#### 7. Expenses of the Board and Board Members.

Compensation for the Disputes Review Board members, and the expenses of operation of the Board, shall be shared by the Government and Contractor in accordance with the following:

a. The fees and expenses of all three members of the DRB shall be shared equally by the Government and the Contractor. The Contractor shall pay the invoices of all DRB members after approval by both parties. The Government shall reimburse the Contractor for one half of the approved invoices.

b. The Government at its expense will provide administrative services, such as conference facilities and secretarial services, to the Board.

#### 8. Three Party Agreement.

a. The Contractor, the Government and all three members of the Board shall execute the "Disputes Review Board Three Party Agreement" within 30 calendar days following the final selection of the third member.

b. The "Disputes Review Board Three Party Agreement" and the "Contract Disputes Review Board Guidelines" to said Agreement are set forth in attachments 2 and 3.

## ALTERNATIVES DISPUTES REVIEW PROCESS - ATTACHMENT 2

## THREE PARTY AGREEMENT

THIS THREE PARTY AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 200\_, between: The United States Army Corps of Engineers, acting through the Contracting Officer of the U.S. Army Engineer District, Los Angeles, hereinafter called the CORPS; the \_\_\_\_\_ company, hereinafter called the "CONTRACTOR," and the Disputes Review Board, hereinafter called the "BOARD" consisting of three members; \_\_\_\_\_; \_\_\_\_\_, and \_\_\_\_\_.

WITNESSETH that,

WHEREAS, the CORPS and the CONTRACTOR are now engaged in the construction of the Prado Dam, Embankment, Outlet Works, and Appurtenances in Riverside County, California, under Contract No. DACW09-\_\_-B-\_\_\_\_; and

WHEREAS, the contract includes a provision authorizing, upon the mutual agreement of both the CORPS and the CONTRACTOR, the establishment and operation of a "Disputes Review Board" to assist in resolving disputes and claims; and

WHEREAS, the BOARD is composed of three members, one selected by the CORPS, one selected by the CONTRACTOR and the third member selected by these two;

NOW THEREFORE, in consideration of the terms, conditions, covenants and performance contained herein, or attached and incorporated and made a part hereof, the parties agree as follows:

## I.

## DESCRIPTION OF WORK

In order to assist upon mutual agreement by the CORPS and the CONTRACTOR in the resolution of disputes and claims between the CONTRACTOR and the CORPS, the contract provides for the establishment of a Disputes Review Board. The intent of the BOARD is to fairly and impartially consider any disputes mutually placed before it, and to provide written recommendations for resolution of such disputes to both the CORPS and the CONTRACTOR. The members of the BOARD shall perform all services necessary to participate in the BOARD's actions in accordance with the following Scope of Work.

## II.

## SCOPE OF WORK

The Scope of Work of the BOARD includes, but is not limited to, the following items of work.

## A. Procedures.

Prior to consideration of an appeal, the BOARD shall establish rules that will govern the conduct of its business, and reporting procedures based upon guidelines which are made a part of the Special Clause entitled, "ALTERNATIVE REVIEW DISPUTES PROCESS." The BOARD's factual recommendations, resulting from their consideration of a dispute or claim, shall be furnished

in writing to the CORPS and the CONTRACTOR. The recommendations shall be based on the pertinent contract provisions and facts and circumstances involved in the dispute.

B. Construction Site Visits.

The members as a BOARD shall visit the project site at least quarterly to keep abreast of construction activities and to develop a familiarity for the work in progress. More frequent site visits may be warranted. The frequency, exact time and duration of these visits shall be as mutually agreed between the CORPS, the CONTRACTOR and the BOARD. The Board should take these opportunities to make recommendations to either or both, the Government and the Contractor to facilitate the construction and/or prevent problems from occurring.

C. BOARD Consideration of a Dispute or Claim.

In the event of a claim or dispute, the CORPS and the CONTRACTOR may mutually agree to submit such claim or dispute to the BOARD. Upon receipt by the BOARD of a written claim or dispute, the BOARD shall convene to review and consider the matter. Both the CORPS and the CONTRACTOR shall be given the opportunity to present their evidence at these meetings. It is expressly understood that the BOARD members are to act impartially and independently in consideration of the contract provisions and the facts and conditions surrounding any written claim or dispute presented by the CORPS or the CONTRACTOR. The BOARD's factual recommendations concerning any such claim or dispute are advisory and non-binding upon both the CORPS and the CONTRACTOR.

D. Time and Place of Board Meetings.

The time and location of BOARD meetings shall be determined by the BOARD.

III.

CONTRACTOR RESPONSIBILITY

The CONTRACTOR shall furnish one copy of all pertinent documents it might have, other than those furnished by the CORPS, which are or may become pertinent to the performance of the BOARD. Pertinent documents are any drawings or sketches, calculations, procedures, schedules or estimates or other documents which are used in the performance of the work or in justifying or substantiating the Contractor's position.

IV.

CORPS RESPONSIBILITIES

The CORPS shall furnish the following services and items.

A. Contract Related Documents.

The CORPS Shall furnish the BOARD three copies of the Contract documents, change orders, written instructions issued by the CORPS to the Contractor or other documents pertinent to the performance of the contract and therefore, necessary to the BOARD's work.

B. Coordination and Services.

The CORPS Contracting Officer's Representative for the contract will, in cooperation with the CONTRACTOR, coordinate the operations of the BOARD. The CORPS, acting through the Contracting Officer's Representative, will arrange or provide conference facilities at or near the contract site and provide secretarial and copying services.

C. BOARD Cost Records.

The Board will maintain complete cost records, which will be available for inspection by either party. Shared expenses include the members' wages and travel expense, local lodging and subsistence for the BOARD members, and direct non-salary costs associated with BOARD operations.

V.

COMPENSATION

A. Payment for services of the CORPS and CONTRACTOR appointed members of the BOARD and the third appointed member will be at the rates agreed to between the CORPS and the CONTRACTOR (for the third appointed member) and between each of them and their respective appointed member.

Compensation, travel, and costs, for the BOARD members, and the expenses of operation of the BOARD, shall be shared by the CORPS and the CONTRACTOR in accordance with the following:

a. The CORPS and the CONTRACTOR shall share equally in the BOARD members' wages, expenses, and travel.

b. The CORPS and the CONTRACTOR shall share equally the other reasonable and necessary expenses of the BOARD.

B. Fee - Third Appointed Member.

Payment for services rendered by the third member of the BOARD shall not exceed the daily billing rate of \$\_\_\_\_\_, including travel time. This daily rate includes all direct labor costs, overhead and profit. Travel and subsistence expenses will be reimbursed at the actual cost, but shall not exceed the allowable amounts as provided by the Government's Joint Travel Regulations in effect at the time the expenses are incurred.

C. Direct Non-Salary Costs.

Direct non-salary costs of the BOARD will be reimbursed at the actual cost to the BOARD. These charges may include, but are not limited to; printing, long distance telephone calls, supplies, etc. The billing for non-salary costs, directly identifiable with the project, shall be an itemized listing to the charges supported by the original bills, invoices, expense accounts and miscellaneous supporting data retained by the BOARD members. Copies of the original supporting documents shall be supplied to the parties upon request.

D. Maximum Total Amount Payment.

The maximum total amount payable under this AGREEMENT for the BOARD's fee and travel costs, and the BOARD's direct non-salary costs, shall not exceed \$\_\_\_\_\_, unless a prior supplemental AGREEMENT has been negotiated and executed by the CORPS and the CONTRACTOR.

## E. Payments.

The BOARD may submit invoices to the CONTRACTOR for partial payment for work completed by the BOARD not more than once per month during the progress of the work. Such invoices shall be accompanied by a general description of activities performed during the billing period. The value of the work accomplished for partial payment shall be established by the billing from the BOARD members, and itemized direct non-salary costs incurred by the Board. The CONTRACTOR shall pay the invoices of the BOARD after approval by both parties. The CORPS shall reimburse the CONTRACTOR for one half of the approved invoices.

## F. Inspection of Cost Records.

The BOARD shall keep available for inspection by representatives of the CORPS for a period of three years after final payment the cost records and accounts pertaining to this AGREEMENT.

## VI.

## TERMINATION OF AGREEMENT

The parties of this AGREEMENT mutually agree that this AGREEMENT may be terminated at any time by written notice by the CORPS or CONTRACTOR to the other party. BOARD members may withdraw from the BOARD by providing notice. BOARD members may be terminated for cause only by their original appointor. Therefore, the CORPS may only terminate the CORPS appointed member, the CONTRACTOR may only terminate the CONTRACTOR appointed member, and the first two members must agree to terminate the third member.

## VII.

## LEGAL RELATIONS

The parties hereto mutually understand and agree that the third BOARD member in the performance of any duties on the BOARD is acting in the capacity of an independent Contractor and not as an employee of either the CORPS or the CONTRACTOR. The board members are absolved of any personal or professional liability arising from the activities and recommendations of the BOARD.

## VIII.

## DISPUTES

Any dispute between the parties hereto, arising out of the work or other terms of this AGREEMENT, which cannot be resolved by negotiation and mutual concurrence between the parties, shall render this AGREEMENT terminated.

## IX.

## GENERAL

## A. Notices.

All notices to be given herein shall be effective upon receipt and shall be in writing and personally delivered or mailed, first class,, postage

prepaid or given by telegram, facsimile or other similar means (followed by a confirmation by mail) to the parties. As the case may be, at the following address or such other address as may hereafter be designated, by the parties:

- a. If to the CORPS:  
Address to be provided.
- b. If to the Contractor:  
Address to be provided.
- c. If to the BOARD Members:  
Address to be provided.

B. Confidentiality.

No BOARD Member shall disclose to any person proprietary or confidential information of the CORPS or the Contractor, except as may be required by law.

In WITNESS WHEREOF, the parties hereto have executed this AGREEMENT as of the day and year first above written.

BOARD MEMBER

By: \_\_\_\_\_

Title: \_\_\_\_\_

BOARD MEMBER

By: \_\_\_\_\_

Title: \_\_\_\_\_

BOARD MEMBER

By: \_\_\_\_\_

Title: \_\_\_\_\_

CONTRACTOR

By: \_\_\_\_\_

Title: \_\_\_\_\_

U.S. ARMY CORPS OF ENGINEERS

By: \_\_\_\_\_

Title: Contracting Officer

## ALTERNATIVE DISPUTES REVIEW PROCESS - ATTACHMENT 3

## CONTRACT DISPUTES REVIEW BOARD

## GUIDELINES

## I.

## OBJECTIVE

The principal objective of the Disputes Review Board (BOARD) is to provide technical advice to both parties that will assist in the resolution of disputes which would otherwise likely be resolved through the traditional litigative processes. If this objective is achieved, such disputes can be resolved promptly, with minimum expense, and with minimum disruption to the administration and performance of the work. It is not intended for the GOVERNMENT or the CONTRACTOR to default on their normal responsibility to amicably and fairly settle their differences by indiscriminately assigning disputes to the BOARD. It is intended that if mutually agreed to by the parties to constitute a Disputes Review Board for the purpose of attempting to resolve contract disputes, that the mere existence of the BOARD will encourage the CORPS and the CONTRACTOR to resolve potential disputes without the necessity of resorting to the formal appeal procedure under the "Disputes" clause of the contract.

## II.

## RESPONSIBILITY OF THE BOARD

A. The BOARD will provide technical advice and recommendations concerning controversy between the CONTRACTOR and the CORPS from construction arising under the contract. Primarily, the BOARD will consider interpretation of the plans and/or specifications, delays, acceleration of the work, scheduling, classification of extra work, changed conditions, design changes, and the like. During its regular visits to the job site, the BOARD will encourage the resolution of differences at the job level. The Board should take these opportunities to make recommendations to either or both, the Government and the Contractor to facilitate the construction and/or prevent problems from occurring.

B. During the period when the BOARD is in effect, other than by formal factual recommendations to both the CORPS and the CONTRACTOR, the BOARD will refrain from giving any advice or consultative services to either party. The BOARD members will act in a completely independent manner and will have no consultative or business connections with either party during their tenure as BOARD members.

C. Normally, the third BOARD member selected by the first two will act as Chairman for all activities. However, this may be delegated to another member from time to time.

## III.

## REGULAR CONSTRUCTION PROGRESS MEETINGS

A. All regular meetings will be held at or near the job site. Each meeting will consist of a round table discussion and a field inspection of the work being performed. The round table discussion will be conducted by a member of

the CORPS and will be attended by selected personnel from the CORPS and the CONTRACTOR. The agenda will generally be as follows:

1. Opening remarks by the CORPS Representative.
  2. A description by the CORPS of work accomplished since the last meeting, the current status of the work, schedule-wise, and a forecast for the coming period.
  3. An outline, by the CONTRACTOR, of potential problems and a description of proposed solutions.
  4. An outline by the CORPS' Contracting Officer, or his authorized representative, as to the status of the work as he views it including potential problems and proposed solutions.
  5. A brief description of potential claims or disputes which have surfaced since the last meeting.
  6. A summary of the status of past disputes and claims.
- B. The CORPS will prepare minutes of all regular meetings and circulate them for revision and/or approval by all concerned.
- C. The field inspection will cover all active segments of the work, the BOARD being accompanied by both the CORPS and CONTRACTOR personnel.
- D. The Board should take these opportunities to make recommendations to either or both, the Government and the Contractor to facilitate the construction and/or prevent problems from occurring.

#### IV.

##### HANDLING OF WRITTEN APPEALS

- A. When a written appeal is referred to the BOARD by either party, it shall first decide when to conduct a hearing. For an urgent matter the BOARD should convene at its earliest convenience. All hearings shall commence no later than 30 days following transmittal of a dispute to the BOARD.
- B. The BOARD may request that written documentation and arguments from both parties be sent to each individual member for study before the hearing begins.
- C. Normally, the hearing will last no more than 2 days, and would be conducted at the job site. However, any location which would be more convenient to all parties and still provide all required facilities and access to necessary documentation would be satisfactory.
- D. For hearings, the third member of the BOARD will act as Chairman, or he may appoint one of the other members. The CORPS and the CONTRACTOR shall have representatives at all hearings. The party initiating the dispute to the BOARD will discuss the dispute followed by the other party, each party being allowed equal time. Each party will then be allowed one or more rebuttals until all aspects are thoroughly covered. Each time a person testifies the BOARD members may ask questions, request clarification, or ask for further data. In large or complex cases more than two days of additional hearings may be necessary in order to consider all the evidence presented by both parties. However, no hearing on any single dispute will last for more

than 4 calendar days.

E. After the hearings are concluded, the BOARD shall meet in private and reach a conclusion supported by two or more members. Its factual (as opposed to legal) findings and recommendations, together with its reasons, shall then be submitted as a written report to both the CORPS and the CONTRACTOR within 30 days following completion of the hearings. The Board's recommendations shall be based on the pertinent contract provisions and facts and circumstances involved in the dispute.

F. The BOARD should make every effort to reach a unanimous decision. If this proves impossible, the dissenting member may prepare a minority report.

G. Although both parties should place weight upon the BOARD's recommendations, they are not binding. Either party may request the BOARD to reconsider its recommendation.

H. Position papers or other written material supplied to the BOARD are admissible in a subsequent proceeding unless the submitting party designates that they are submitted for settlement purposes only; in addition, any written report of the BOARD shall be admissible in such subsequent proceedings and each party hereby stipulates to its admissibility; and provided, further that if settlement is reached as a result of the recommendations of the BOARD, any material presented to the BOARD, as well as the recommended settlement, may be used to justify any contract modification which may result from the settlement.

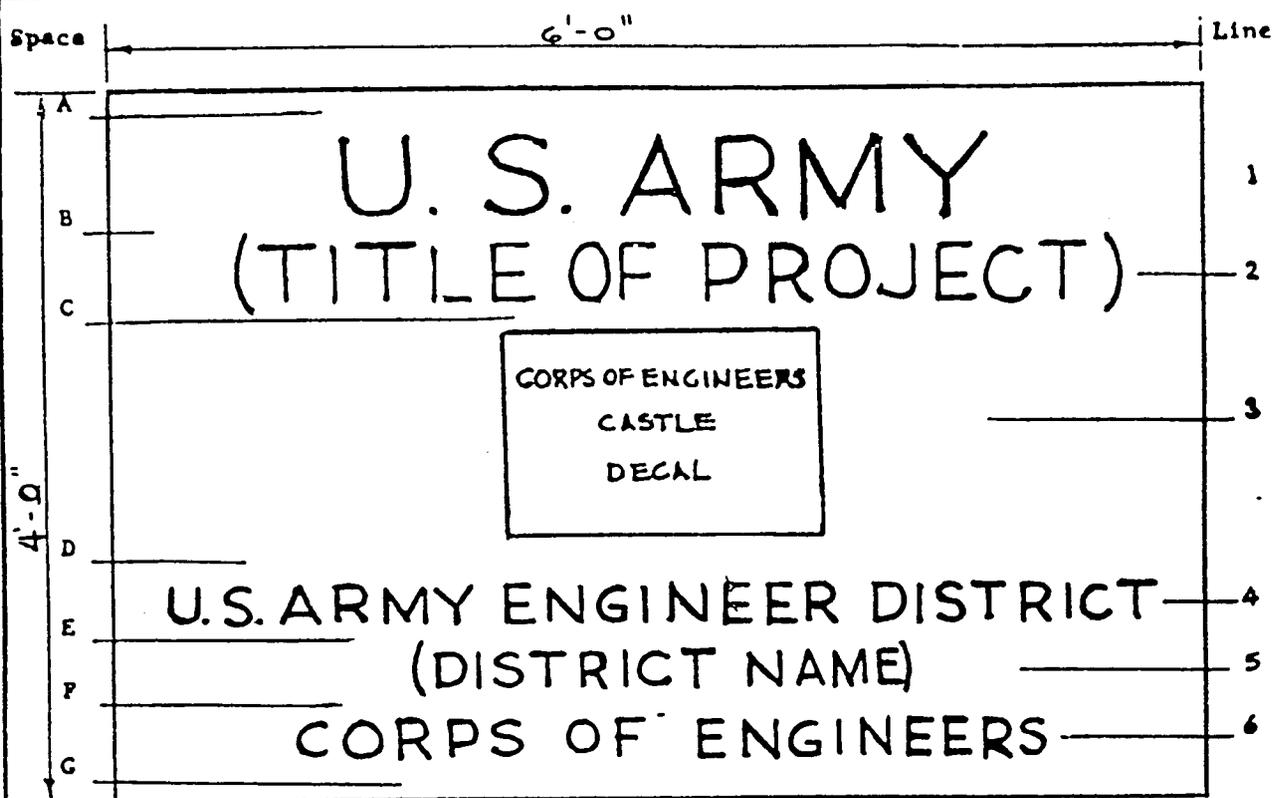
I. It may not be necessary for the BOARD to keep a formal record of its sessions during the consideration of a dispute. This would depend partly upon the nature and magnitude of the dispute and upon the attitude of the parties.

#### V.

#### MISCELLANEOUS

It is not desirable to adopt hard and fast rules for the functioning of the BOARD. The entire procedure should be kept flexible so that it can adapt to changing situations. The BOARD should initiate, with the other parties' concurrence, new rules or modifications to old ones whenever this is deemed necessary. It is desirable to keep the hearings informal.

-- End of Section --



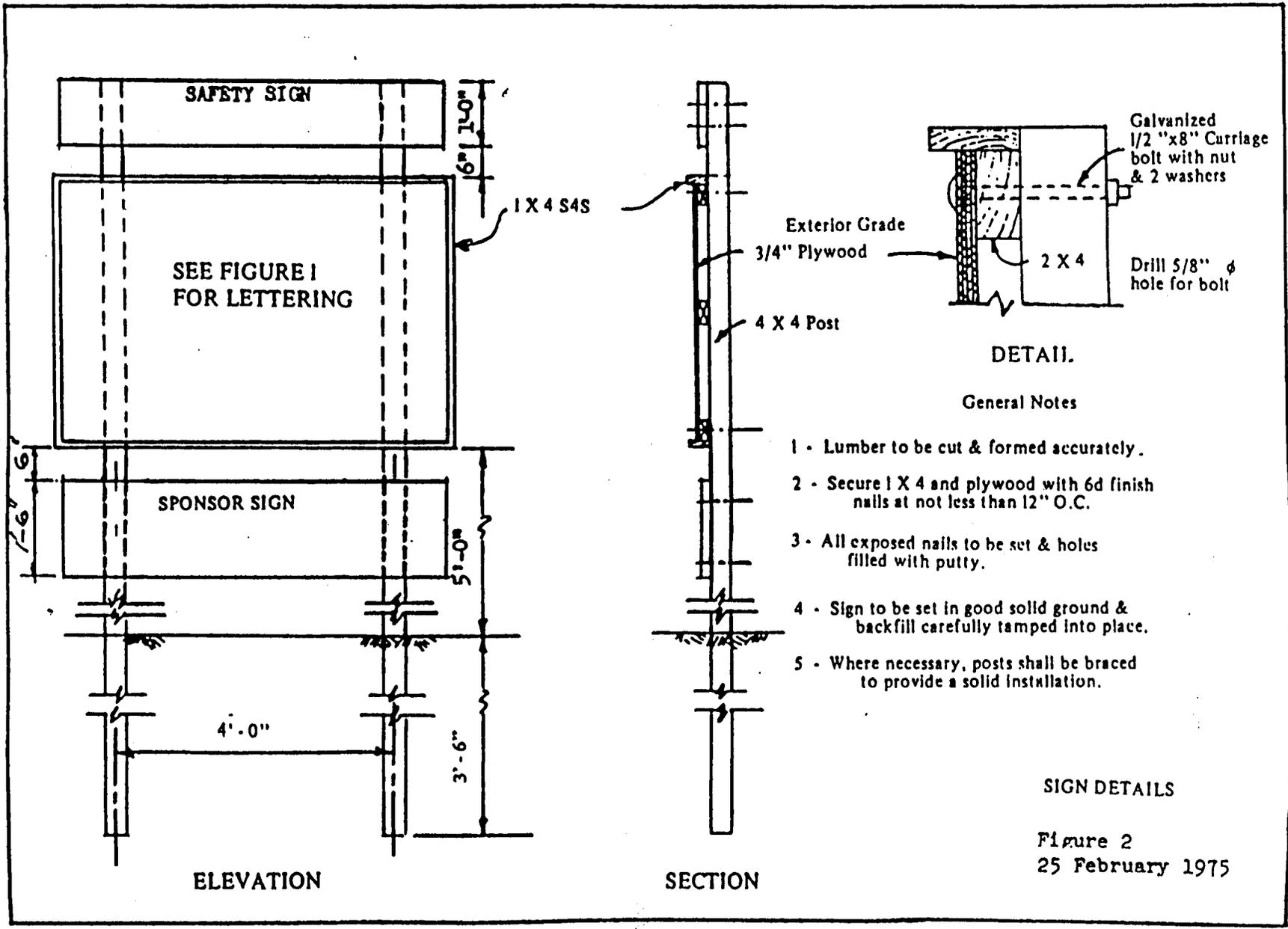
SCHEDULE

<u>Space</u>	<u>Height</u>	<u>Line</u>	<u>Description</u>	<u>Letter Height</u>	<u>Stroke</u>
A	3"	1	U. S. ARMY	5 1/2"	7/8"
B	2"	2	PROJECT NOMENCLATURE	4"	5/8"
C	2"	3	CORPS OF ENGINEERS CASTLE (DECAL)	1 1/2"	--
D	3"	4	U. S. ARMY ENGINEER DISTRICT	2 3/4"	3/8"
E	2"	5	DISTRICT NAME	2 1/4"	1/4"
F	2"	6	CORPS OF ENGINEERS	2 1/2"	3/8"
G	3"				

Lettering Color -- Black

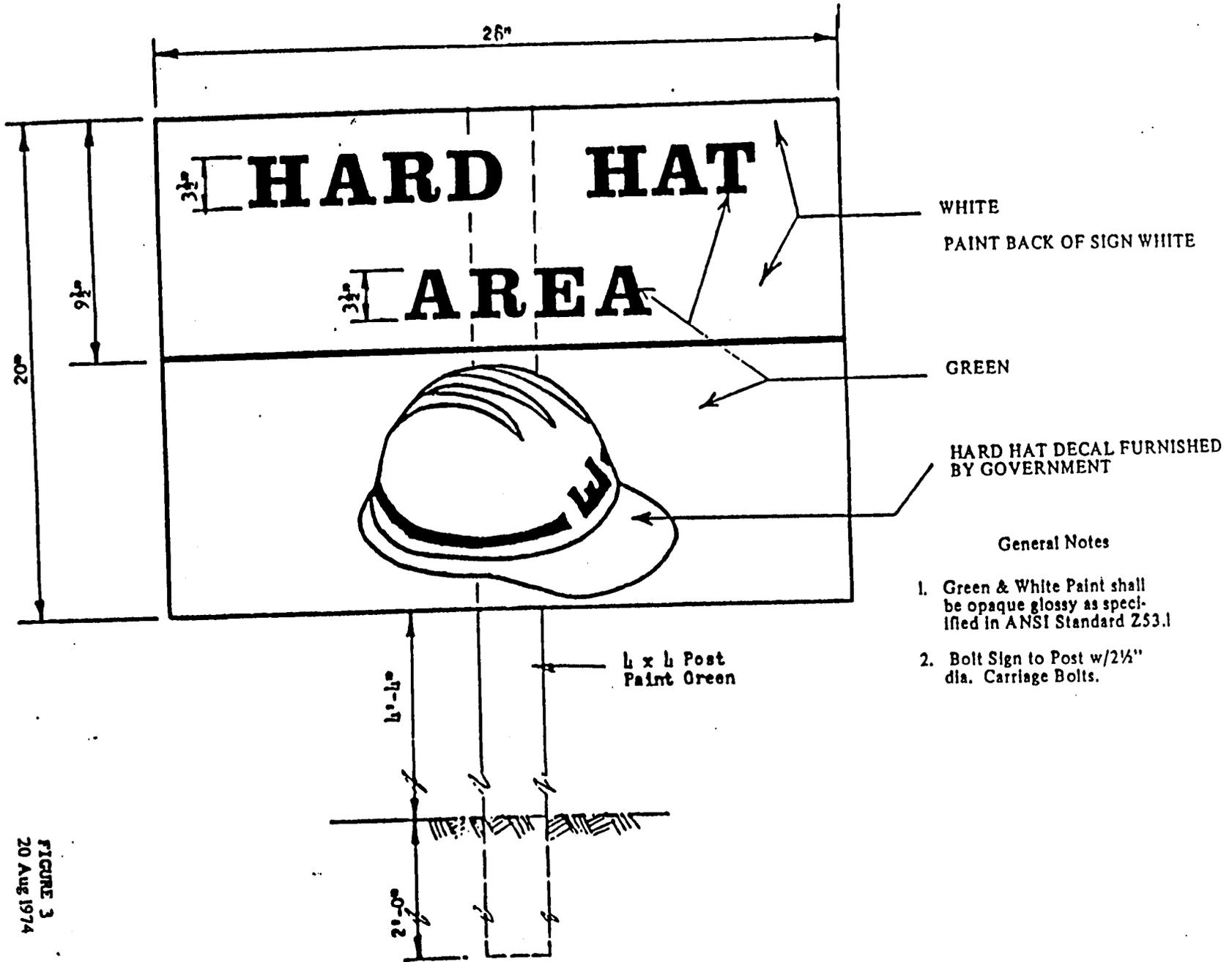
PROJECT SIGN  
(Army-Civil Works)

Figure 1  
14 August 1972



SIGN DETAILS

Figure 2  
25 February 1975



WHITE  
PAINT BACK OF SIGN WHITE

GREEN

HARD HAT DECAL FURNISHED  
BY GOVERNMENT

General Notes

1. Green & White Paint shall be opaque glossy as specified in ANSI Standard Z53.1
2. Bolt Sign to Post w/2 1/2" dia. Carriage Bolts.

FIGURE 3  
20 Aug 1974

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SECTION 01230

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-- End of Section Table of Contents --

## SECTION 01230

## SAFETY REQUIREMENTS

## 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.

## ENGINEERING MANUALS (EM)

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

## OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

Standards for Construction (Title 29, Code of Federal Regulations Part 1926 as revised)

## 1.2 GENERAL

During the performance of this contract, the Contractor shall be responsible for conditions of the jobsite, including care and safety of all property, and safety of all persons whether or not employed by the Contractor. This requirement shall apply continuously and not be limited to normal working hours and shall apply to all activities both directly and indirectly associated with the performance of this contract. These requirements do not supersede, but are in addition to any federal, OSHA, state, or local regulations. If a conflict occurs between these requirements and current regulations, the more stringent shall apply.

## 1.2.1 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) STANDARDS

The Standards for Construction and the Corps of Engineers General Safety and Health Requirements Manual, EM 385-1-1, are both applicable to this contract. The most stringent requirement of the two standards will be applicable.

## 1.2.2 Responsibility of the Contractor

It shall be the responsibility of the Contractor to be familiar with the required health and safety regulations in the performance of this work.

## 1.2.3 Site Specific Safety

Pursuant to EM 385-1-1, the Contractor shall submit a Site-specific Safety and Health Plan. Should any unforeseen or site specific safety related factor, hazard or condition become evident during the performance of the work, the Contractor shall take immediate and prudent action to establish and maintain safe working conditions and to safeguard site personnel, the

public, and the environment. The Contractor shall immediately inform the Contracting Officer of such a condition and confirm the condition and its resolution in writing to the Contracting Officer within 24 hours.

#### 1.2.4 Emergency

In the event of any emergency associated with or resulting from work at this site, the Contractor shall without delay: cease work activity on the site; take diligent action to remove or otherwise minimize the cause of the emergency; render full assistance to local authorities to remedy any impact on local residents or property; alert the Contracting Officer and Government; and institute whatever measures are necessary to prevent any repetition of the conditions or actions leading to or resulting in the emergency.

#### 1.3 SUBMITTALS

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

##### SD-01 Preconstruction Submittals

Accident Prevention Plan; G

##### SD-07 Certificates

Qualifications for Safety and Health Professional(s); G

Qualifications for Safety and Health Technicians; G

Delegation of Authority; G

Worker's compensation

Site-specific Safety and Health Plan; G

Activity Hazards Safety Analysis; G

#### 1.4 PUBLIC SAFETY

Attention is invited to the CONTRACT CLAUSE: PERMITS AND RESPONSIBILITIES. The Contractor shall provide temporary fencing, barricades, and/or guards, as required, to provide protection in the interest of public safety. Whenever the Contractor's operations create a condition hazardous to the public, he shall furnish at his own expense and without cost to the Government, such flagmen and guards as are necessary to give adequate warning to the public of any dangerous conditions to be encountered and he shall furnish, erect, or maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents and avoid damage or injury to the public. Flagmen and guards, while on duty and assigned to give warning and safety devices shall conform to applicable city, county, and state requirements. Should the Contractor appear to be neglectful or negligent in furnishing adequate warning and protection measures; the Contracting Officer may direct attention to the existence of hazards and the necessary warning and protective measures shall be furnished and installed by the Contractor without additional cost to the Government. Should the Contracting Officer point out the inadequacy of warning and protective measures, such action of the Contracting Officer shall not relieve the Contractor from any responsibility for public safety or abrogate his obligation to furnish and pay for those devices. The installation of any general illumination shall not relieve the Contractor

of his responsibility for furnishing and maintaining any protective facility.

#### 1.5 ACCIDENT PREVENTION PLAN

The Contractor shall submit an Accident Prevention Plan which describes the methods by which the contract safety requirements of both EM 385-1-1 and this specification shall be met.

#### 1.6 ACTIVITY HAZARD ANALYSIS

Based on the construction schedule, the Contractor shall submit a Activity Hazards Safety Analysis of each major phase of work prior to entering that phase of activity. The analysis shall include major or high risk hazards, as well as commonly recurring deficiencies that might possibly be encountered for that operation, and shall identify proposed methods and techniques of accomplishing each phase in a safe manner. The Prime Contractor's superintendent shall take active participation in the Activity Hazards Analysis, including the subcontractors' work. Prior to start of actual work a meeting shall be held with Prime Contractor, Government, and affected subcontractor to review the Activity Hazard Analysis. In addition, job site meetings shall be held to indoctrinate foreman and workers on details of this analysis.

#### 1.7 LIGHTING

The Contractor shall provide a minimum of five (5) foot-candle lighting intensity for all construction areas, including borrow areas, during the contract performance period. Any lights used to illuminate construction activities shall be hooded and designed so as to reflect away from adjoining properties and public thoroughfares.

#### 1.8 TEMPORARY ELECTRIC WIRING

##### 1.8.1 Construction Equipment

In addition to the requirements of EM 385-1-1, all temporary wiring conductors installed for operation of construction tools and equipment shall be either Type TW or THW contained in metal raceways, or may be multiconductor cord. Temporary wiring shall be secured above the ground or floor in a workmanlike manner and shall not present an obstacle to persons or equipment. Open wiring may only be used outside of buildings, and then only in strict accordance with the provisions of the National Electrical Code.

##### 1.8.2 Circuit Protection

All 15 and 20 ampere outlets which are not a part of the permanent wiring of a building or structure, shall have ground fault circuit interrupters (GFI) for personnel protection. GFI shall be provided for extension cords and for all permanent receptacles that are not properly grounded. A testing means shall be provided which will impose a measured fault of 5 milliamperes and result in tripping the GFI unit.

#### 1.9 FIRE PREVENTION AND PROTECTION

The Contractor shall perform all work in a fire-safe manner and shall supply and maintain at each work area adequate fire-fighting equipment capable of extinguishing incipient fires. The Contractor shall comply with

all applicable Federal, local, and state fire-prevention regulations.

#### 1.10 EXPLOSIVES

No blasting will be allowed.

#### 1.11 PERMITS

Reference is made to the paragraphs; FIRE PREVENTION AND PROTECTION, EXPLOSIVES, and the clause of the contract entitled "PERMITS AND RESPONSIBILITIES", which obligates the Contractor to obtain all required licenses and permits

#### 1.12 FIRST AID

The Contractor shall have at least one certified First Aid Technician on site at all times. This person may perform other duties, but must be immediately available to render first aid when needed. Certification shall consist of successful completion of an American Red Cross course in Multi Media First Aid and Cardio Pulmonary Resuscitation (CPR).

#### 1.13 ACCIDENT REPORTING

In accordance with EM 385-1-1, the Contractor shall submit a written summary of worker's compensation claims which have been filed by worker's in connection with work on the project. The summary shall be submitted at the time when the work is approximately 50 percent complete and at project completion. The summary shall include all subcontractors. The Contractor's and subcontractor's compensation insurance carrier shall certify that the summaries are "correct and true".

#### 1.14 SAFETY PERSONNEL REQUIREMENTS

Full-time, on-site, safety coverage by Contractors shall be required at all times during this contract. This contract is considered high hazard and the following conditions and safety requirements are to be followed during the entire duration of this contract. The Contractor shall employ at the project site to cover all hours of work at least one Safety and Occupational Health Technician per shift to manage the Contractor's accident prevention program. In addition, the Contractor shall have one Safety and Occupational Health Professional to manage the overall Safety program. Duties which are not germane to the safety program, such as quality control or project engineering shall not be assigned to the Safety and Health staff. The principal safety person (the Safety Professional) shall report to and work directly for the Contractor's on-site top manager, higher level official, or corporate safety office. The Safety and Health staff shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of a Safety and Health person will not abrogate safety responsibilities of other personnel.

##### 1.14.1 Qualifications for Safety and Health Professional(s)

- a. Shall have a degree in engineering or safety in at least a four year program from an accredited school and in addition, shall have been engaged in safety and occupational health for at least two years, no time being credited to these two years unless it is in a position of responsibility with safety as a major duty; or
- b. Shall have legal registration as a Professional Engineer,

Certified Safety Professional, or a Certified Safety Manager, and, in addition, shall have been engaged in safety and occupational health for at least one year no time being credited to this one year experience unless it is in a position of responsibility with safety as a major duty; or

- c. Shall have degree other than that specified in (a) above and, in addition, shall have been engaged in safety and occupational health for at least three years' no time being credited to these three years unless it is in a position of responsibility with safety as a major duty; or
- d. In lieu of a degree, shall have been engaged in safety and occupational health for at least five years, no time being credited to these five years unless it is in a position of responsibility with safety as a major duty;
- e. First aid work is not creditable experience.
- f. In addition to the above, the Safety and Occupational Health Professional(s) shall have at least two years experience in rock excavation work. Experience must have included blasting operations and excavation in rock slopes of the nature to be encountered in this contract.

#### 1.14.2 Qualifications for Safety and Health Technicians

- a. A bachelors degree in safety or an associated discipline and currently employed in a safety position; or
- b. An associate degree in Safety or an associated discipline, three years field experience in Safety, and currently employed in a safety position; or
- c. Five years field experience in safety or an associated discipline and currently employed in a safety position.
- d. First Aid work is not creditable experience.

#### 1.14.3 Delegation of Authority

The name and qualifications of nominated safety persons shall be furnished to the Contracting Officer (in resume format) for acceptability. A functional description of duties shall be provided prior to the pre-work conference. In addition, a copy of a letter from an authorized official of the Contractor which describes the duties and authority of the safety professional, including delegating sufficient authority to stop work and immediately correct the unsafe or unhealthful conditions.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

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## SECTION 01270

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## SECTION 01270

## MEASUREMENT AND PAYMENT

## PART 1 GENERAL

## 1.1 MOBILIZATION AND PREPARATORY WORK

Payment for Mobilization, and Preparatory Work will be made at the applicable contract price, which payment shall constitute full compensation for mobilization and preparatory work as specified in Special Clauses, paragraph: Payment for Mobilization and Preparatory Work. Contractor shall further comply to all requirements of Section 01200, "Control Requirements" and provide direct control for entire project which shall be included in payment for "Mobilization and Preparatory Work".

## 1.2 DIVERSION AND CONTROL OF WATER

Payment for Diversion and Control of Water will be made at the applicable contract price, which payment shall constitute full compensation for maintaining the work areas in a dry condition during construction; and providing and maintaining the cofferdam and all other means of seepage control, including dewatering wells.

## 1.3 CLEAR SITE AND REMOVE OBSTRUCTIONS

## 1.3.1 Payment for Clear Site and Remove Obstructions, Outlet Works, Dam Foundation, Approach Channel and Abutments

Payment for Clear Site and Remove Obstructions, Outlet works, Approach Channel, and Abutments will be made for clearing and grubbing and removal of all obstructions within the areas for the dam foundation, abutments, approach channel, outlet works, and disposal and stockpiling of material. Except as otherwise specified, payment includes all applicable earthwork; removal of debris including miscellaneous structures, fences, waterlines, asphalt roads, and vegetation and cutting and backfilling existing piezometers, protection of existing utilities, disposal of all materials, and maintenance of these cleared areas once initial clearing is accomplished.

## 1.3.2 Payment for Clear Site and Remove Obstructions, Borrow Area

Payment for Clear Site and Remove Obstructions, Borrow Area, will be made at the applicable contract price, which payment shall constitute full compensation, for clearing and grubbing, and removal of all obstructions within the actual areas used for the borrow operation. Except as otherwise specified, payment includes all applicable earthwork; removal of existing structures and other indicated obstructions; removal of trash and debris, concrete irrigation pipes, and vegetation; removal of topsoil for salvage; protection of existing utilities; replacement or restoration of utilities; disposal of all materials, and maintenance of these areas throughout the duration of the contract. Final grading and spreading of stockpiled organic material in borrow areas shall be included in this bid item.

## 1.3.3 Payment for Demolition of Existing Intake Structure and Access Bridge

Payment for Demolition of Existing Intake Structure and Access Bridge will be made per the contract lump sum price for its demolition, removal and disposal from the site.

#### 1.3.4 Payment for Abandon Existing Outlet Structure

Payment for the Abandon Existing Outlet Structure will be made at the applicable contract lump sum price, which payment shall constitute full compensation for labor, materials including sand backfill, shotcrete plug including reinforcement, drill and epoxy dowels, metallic waterstop, steel sealing plates, reinforced concrete cover slab, and for all equipment and tools required to complete the work.

#### 1.3.5 Existing Embankment

No separate payment will be made for clear and grubbing the existing embankment. Therefore, all costs shall be included in the contract prices for the items to which the work applies.

#### 1.3.6 Disposal Areas and Stockpile Areas

No separate payment will be made for clear and grubbing the disposal and stockpile areas. Therefore, all costs shall be included in the contract prices for the items to which the work applies.

### 1.4 EXCAVATION

#### 1.4.1 Measurement

Unless specified or approved otherwise, excavation items will be measured for payment by computing the volume in cubic yards, using plotted surveyed cross sections and the average end area method. Excavated materials will be measured for payment from its original position. Paylines for excavation will be as shown on the plans. No measurement for payment will be made for over excavation, nor for construction, removal of haul roads, dressing, drainage and road surfacing materials, or for the disposal of the excavated materials from over excavation and construction and maintenance of access haul roads. No separate measurement for payment will be made for borrow area excavation except for Zone II borrow as identified.

#### 1.4.2 Payment for Excavation, Soil, Outlet Works Sta. 0+00 to Sta. 18+13.50

Payment for Excavation, Soil, Outlet Works Sta. 0+00 to Sta. 18+13.50 will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling stockpiling, processing, and disposition of the excavated material. Miscellaneous excavation of the existing embankment not otherwise identified in this Section of Payment will be included in this unit bid price. Excavation for the Approach Channel, Pilot Channel, and Wingwalls shall be included in this bid item.

#### 1.4.3 Payment for Excavation, Rock

Payment for Excavation, Rock will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling and disposition of the excavated material.

#### 1.4.4 Payment for Excavation, Soil, Outlet Works Sta. 18+13.50 to Sta. 49+93

Payment for Excavation, Soil, Outlet Works Sta. 18+13.50 to Sta. 49+93 will

be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling stockpiling, processing, and disposition of the excavated material. Excavation required for the stilling basin wingwalls shall be included in this unit bid price or in the Excavation, Rock bid item.

1.4.5 Payment for Excavation, Soil, Outlet Works Sta. 49+93 to Sta. 54+00

Payment for Excavation, Soil, Outlet Works Sta. 49+93 to Sta. 54+00 will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling stockpiling, processing, and disposition of the excavated material. Excavation required for the downstream drop structure, toe protection, and cut off walls shall be included in this unit bid price.

1.4.6 Payment for Excavation, Borrow Areas

Payment for Excavation, Borrow Areas will be made at the applicable contract price, which payment shall constitute full compensation for excavation, hauling, and disposition in the stockpile area of the excavated Zone II material from the designated borrow areas.

1.4.7 Payment for Excavation, Removal of Gravel Blanket

Payment for Excavation, Removal of Gravel Blanket will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling and stockpiling the quantity of gravel that meets the specified gradation of the excavated material.

1.4.8 Payment for Excavation, Removal of Stone Protection

Payment for Excavation, Removal of Stone Protection will be made at the applicable contract price, which payment constitutes full compensation for excavating, hauling and stockpiling the quantity of salvaged stone that meets the gradation for stone for 15-inch grouted stone.

1.4.9 Payment for Excavation, Stripping

Payment for Excavation, Stripping will be made at the applicable contract price, which payment shall constitute full compensation for excavation, hauling, and disposition of the stripped material from the dam abutments.

1.4.10 Payment for Excavation, Toe

Payment for Excavation, Toe will be made at the applicable contract price, which payment shall constitute full compensation for excavation along the toe of the dam to the lines and grades as shown on the plans, hauling and disposition of the excavated material.

1.4.11 Payment for Excavation, Existing Embankment Crest

Payment for Excavation, Existing Embankment Crest will be made at the applicable contract price, which payment shall constitute full compensation for excavation of all materials, except existing stone and gravel protection, to the lines and grades and hauling the excavated material to a stockpile, and protection of the existing impervious material integrity and moisture content. Excavation for the embankment key trench shall be included in this bid item.

#### 1.4.12 Excavation Stockpile Areas

No separate payments will be made for excavation of stockpile areas. All costs therefore shall be included in the applicable embankment fill items.

#### 1.4.13 Stockpiling

No separate payment will be made for stockpiling material. Therefore, all costs shall be included in the applicable contract prices for the items to which the work applies.

#### 1.4.14 Disposal

No separate payment will be made for disposal of excavated material. Therefore, all costs shall be included in the applicable contract prices for the items to which the work applies.

### 1.5 EMBANKMENTS

#### 1.5.1 Measurement

Measurement for Payment for Embankments will be made between the required excavation and the embankment limit lines, or between the ground lines and embankment lines, as indicated or staked in the field. Quantities will be computed in cubic yards by the average end area method and the planimeter will be considered a precise instrument for measuring plotted cross sections. No measurement for payment will be made for backfill of any over excavation for temporary access and haul roads for the Contractor's convenience.

#### 1.5.2 Foundation Preparation, Zone II Contact Area

##### 1.5.2.1 Measurement

Foundation preparation required to prepare the exposed rock area foundation in the Zone II contact area shall be measured for payment on the basis of the number of square yards of foundation actually prepared as directed and approved for Zone II placement. Measurement shall be parallel to the slope. Any cleaning required subsequent to foundation approval shall not be measured for payment.

##### 1.5.2.2 Payment

Payment for Foundation Preparation, Zone II Contact Area will be made at the applicable contract price, which payment shall constitute full compensation for all operations in connection therewith, including air cleaning prior to surface treatment and placement of embankment material.

#### 1.5.3 Payment for Embankment, Zone I Material

Payment for Embankment, Zone I Material will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, benching the existing embankment, spreading, discing and compacting the fill, complete.

#### 1.5.4 Payment for Embankment, Zone II Material

Payment for Embankment, Zone II Material will be made at the applicable contract price, which payment shall constitute full compensation for

obtaining any necessary material from stockpile or borrow, placing, spreading, discing and compacting the fill, complete.

#### 1.5.5 Payment for Embankment, Transition Zone Material

Payment for Embankment, Transition Zone Material will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, benching the existing embankment, spreading, discing and compacting the fill, complete.

#### 1.5.6 Trenches

No separate payment will be made for backfilling trenches for utilities and pipelines. All costs therefore shall be included in the applicable contract prices for the items to which the work applies.

#### 1.5.7 Subgrade Preparation

No separate payment will be made for subgrade preparation and all costs in connection therewith shall be included in the contract prices for items to which the work applies.

#### 1.5.8 Backfill for Directed Overcut

Backfill for directed overcut, except unsatisfactory material, will be measured and paid for under the applicable contract price for the type of fill placed therein. Where there is no applicable contract item, an adjustment in the contract price will be made.

#### 1.5.9 Additional Rolling

##### 1.5.9.1 Measurement

Additional rolling required in addition to the number of passes specified will be measured on the basis of the number of hours during which the rolling equipment, approved for this job, is operated in making additional required passes. In computing the number of hours worked by the rolling equipment, only the time of actual operation will be included. Time lost by rolling equipment on account of refueling, greasing, oiling, breakdowns or replacement of parts will not be measured.

##### 1.5.9.2 Payment

Payment for Additional Rolling will be made at the applicable contract price, which payment shall constitute full compensation for all cost incidental to additional rolling.

#### 1.6 FILLS AND SUBGRADE PREPARATION

##### 1.6.1 Measurement

Measurement for Payment for Fills and Subgrade Preparation will be made between the required excavation and structure lines and the fill limit lines, or between the ground lines and fill lines, as indicated or staked in the field. Quantities will be computed in cubic yards by the average end area method and the planimeter will be considered a precise instrument for measuring plotted cross sections. No measurement for payment will be made for backfill of any over excavation for temporary access and haul roads for the Contractor's convenience.

### 1.6.2 Payment for Compacted Fill, Levee

Payment for Compacted Fill, Levee will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, spreading and compacting the fill, complete.

### 1.6.3 Payment for Structural Backfill

Payment for Structural Backfill will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, spreading and compacting the fill, complete.

### 1.6.4 Miscellaneous Fill

Payment for Miscellaneous Fill will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, spreading and compacting the fill, complete.

### 1.6.5 Payment for Mitigation Fill

Payment for Mitigation Fill will be made at the applicable contract price, which payment shall constitute full compensation for obtaining any necessary borrow material, placing, spreading and compacting the fill, complete.

## 1.7 SUBDRAINAGE SYSTEM

### 1.7.1 Measurement

Measurement for Subdrainage System shall be lump sum. Items and other appurtenances not identified shall be considered incidental and no measurement or payment shall be made and shall be considered as included in the applicable contract price for the item to which the work applies and no additional compensation will be allowed.

### 1.7.2 Payment for Subdrainage System, Outlet Works

Payment for Subdrainage System, Outlet Works will be made at the applicable contract lump sum price for all piping, fittings, collector boxes, cleanouts, gravel material and sand filter, perforated collector pipes, and all miscellaneous items associated with the subdrain system which shall constitute full compensation for providing subdrainage system, complete in place.

## 1.8 AGGREGATE BASE COURSE

### 1.8.1 Measurement

The Unit measurement for the aggregate base course will be the ton (2,000 pounds). The Contractor shall weight each load on a certified platform scale and furnish the Contracting Officer with duplicate Weigh Master's Certificates showing the actual net weights. One ticket shall be furnished to the plant inspector and one ticket to the inspector at the construction site.

### 1.8.2 Payment for Aggregate Base Course

Payment for Aggregate Base Course will be made at the applicable contract price, which payment shall constitute full compensation for aggregate base course, complete including subgrade preparation.

## 1.9 ASPHALT CONCRETE PAVEMENT

### 1.9.1 Measurement

The unit of measurement for the asphalt concrete pavement will be the ton (2,000 pounds). The Contractor shall weigh each load on a certified platform scale and shall furnish the Contracting Officer with duplicate Weigh Master's Certificates showing the actual net weights. One delivery ticket shall be furnished to the plant inspector and one delivery ticket to the inspector. The bituminous mixture shall be weighed after mixing and no deduction will be made for the weight of bituminous material incorporated therein. Asphalt concrete pavement used for the convenience of the Contractor will not be measured for payment.

### 1.9.2 Payment for Asphalt Concrete Pavement

Payment for Asphalt Concrete Pavement will be made at the applicable contract price, which payment shall constitute full compensation for asphalt concrete surfacing, complete, including tack coat, appurtenant work, and quality control testing. Payment will not include asphalt concrete pavement for which separate payment is provided. Payment will not be made for excessive thickness.

## 1.10 STONE PROTECTION

### 1.10.1 Measurement

The Unit measurement for the aggregate base course will be the ton (2,000 pounds). The Contractor shall weight each load on a certified platform scale and furnish the Contracting Officer with duplicate Weigh Master's Certificates showing the actual net weights. One ticket shall be furnished to the plant inspector and one ticket to the inspector at the construction site.

### 1.10.2 Payment for Stone Protection

Payment for Stone Protection will be made at the applicable contract unit prices per ton, which shall constitute full compensation for obtaining transporting, stockpiling (if applicable), and placing the stone, complete.

### 1.10.3 Payment for Gravel Blanket Protection

Payment for Gravel Blanket Protection will be made at the applicable contract unit prices per ton, which shall constitute full compensation for obtaining and placing the gravel blanket, complete.

### 1.10.4 Payment for Bedding Material for Stone Protection

Payment for Bedding Material for Stone Protection will be made at the applicable contract unit prices per ton, which shall constitute full compensation for obtaining and placing the bedding material, complete.

### 1.10.5 Payment for Stone for Grouted Stone Protection

Payment for Stone for Grouted Stone Protection will be made at the applicable contract unit prices per ton, which shall constitute full compensation for obtaining and placing the stone, complete.

#### 1.11 GROUTING STONE PROTECTION

##### 1.11.1 Measurement

The quantity of grout to be paid for will be measured to the nearest cubic yard by weighing all ingredients in trial batches of grout and converting each batch to absolute volume; the volume thus determined and the number of batches of grout of corresponding proportions acceptably placed in the work shall be used to determine the quantity of grout.

##### 1.11.2 Payment for Grouting Stone Protection

Payment for Grouting Stone Protection will be made at the applicable contract price, which payment shall constitute full compensation for materials including Portland Cement, mixing, transporting, placing, finishing, and curing grout used for grouting stone protection complete.

#### 1.12 WATER DISTRIBUTION SYSTEM

##### 1.12.1 Measurement

The pipe work to be performed under these specifications will be listed in the contract items by size or size and class and what other information is necessary for identification. The length of pipe will be the horizontal projection designated by the Engineer.

Items and other appurtenances not identified shall be considered incidental and no measurement or payment shall be made and shall be considered as included in the applicable contract prices for the items to which the work applies and no additional compensation will be allowed.

##### 1.12.2 Payment for Chlorination Equipment

Payment for the chlorination equipment shall include all labor, equipment and materials for the installation of the dry pellet chlorinator and related equipment required for proper operation, including, but not limited to mounting system, injection piping, chlorine hopper, and pellets.

##### 1.12.3 Payment for Pressurized Water Storage Tank

Payment for the water storage tank shall include all labor, equipment and materials for the installation of the tank including, but not limited to the pressurized tank, mounting plate, bolts, and tank pressure adjustments as required for proper system operation.

##### 1.12.4 Payment for Water System Piping, Valves, and Appurtenances

Payment for water system piping, valves, and appurtenances shall include all labor, equipment and materials required for installation, including, but not limited to, control valves, shutoff valves, check valves, air/vac valves, water meter, pressure switch, pressure gauge, PVC pressure piping and fittings, copper pressure tubing and fittings, PVC and steel drainage piping and fittings, pipe couplings, flange and isolation kits, blow-off assembly, adjustable pipe supports, gravel drainage pit, pipe tape wrap,

and related appurtenances from the top of the well casing to a point 5-feet from the Well Slab Foundation.

#### 1.12.5 Payment for Concrete Well Slab Foundation

Payment for the well slab shall include all materials, labor, and equipment required for the installation of the reinforced concrete foundation, as indicated on the plans.

#### 1.12.6 Payment for 3" Diameter PVC Well Discharge Pipe

Payment for 3" Diameter PVC Pipe, will be made at the applicable contract unit price per lineal foot of pipe including 6-inch steel casing, casing insulators, casing seals, Schedule 40 pipe, Schedule 80 pipe, fittings and appurtenances, and trenching, shoring, bedding and backfill, which payment shall constitute full compensation for all work, complete in place.

### 1.13 WATER WELLS

#### 1.13.1 Measurement

Measurement of pipe work, bore holes, and pumps and appurtenances to be performed under these specifications will be listed in the contract items by size, or size and class or whatever other information is necessary for identification.

Items and other appurtenances not identified shall be considered incidental and no measurement or payment shall be made and shall be considered as included in the applicable contract prices for the items to which the work applies and no additional compensation will be allowed.

#### 1.13.2 Payment for Bore Hole and Well Development

Payment for the 6" well shall be made at the applicable contract lump sum price per well for a given diameter and depth, and shall include all equipment, labor, and materials required to bore the well; install the casing, screening, gravel pack, cement seal, gravel feed tube, well seal, submersible well pump, torque arrestor, discharge piping to the top of the casing, and related fittings and appurtenances; log and test soil samples; clean and disinfect; and pump test the well.

### 1.14 OBSERVATION WELLS

#### 1.14.1 Payment for Observation Wells

Payment for Observation Wells will be made at the applicable contract unit price per each, which payment shall constitute full compensation for providing the observation wells including pipe perforated and solid, borehole, casing, gravel pack, seal, concrete cap and steel, locking cover, which shall constitute full compensation for all work, complete in place.

### 1.15 STORM DRAIN AND DRAINAGE FACILITIES

#### 1.15.1 Payment for 42" Culvert Extension

Payment for the 42" Culvert Extension will be made at the applicable contract lump sum price, which payment shall constitute full compensation for labor, materials including RCP, concrete encasement, inlet and outlet, riprap, excavation, backfill, formwork, concrete, portland cement, steel

reinforcement and for all equipment and tools required to complete the work.

#### 1.15.2 Payment for Outlet Works Channel Side Drains

Payment for Outlet Channel Side Drains will be made at the applicable contract lump sum price which shall include all trenching shoring, bedding material, R.C.P. backfill, reinforced concrete outlet and inlet structures, and flap gates, which shall constitute full compensation for providing all work, complete in place.

#### 1.16 ACCUSONIC FLOW METERS

Payment for Accusonic Flow Meters will be made at the applicable contract unit price per each for all work which shall constitute full compensation for providing all work, complete in place.

#### 1.17 SAWPA RELOCATION/PROTECTION

##### 1.17.1 Measurement

The pipe work and sanitary sewer facilities to be performed under these specification will be listed in the contract items by size or size and class and whatever other information is necessary for identification. The length of pipe to be paid will be the horizontal projection designated by the engineer.

Payment or other items to complete the work such as manholes and concrete encasement shall be measured and paid for as separate items.

Items and other appurtenances not identified shall be considered incidental and no measurement or payment shall be made and shall be considered as included in the applicable contract prices for the items to which the work applies and no additional compensation will be allowed.

##### 1.17.2 Payment for 60-inch Sewer Pipe Encasement

Payment for 60-inch Sewer Pipe Encasement will be made at the applicable contract unit price per lineal foot, which shall constitute full compensation for providing all work, complete in place, as shown on the Plans.

##### 1.17.3 Payment for Raising Exist. 48-inch Diameter Precast Concrete Manhole

Payment for raising existing 48-inch diameter precast concrete manhole to new channel grade including new precast concrete manhole rings and top slab, concrete collar, cover, excavation, and backfill will be made at the applicable contract lump sum price, which shall constitute full compensation for providing all work, complete in place, as shown on the Plans.

#### 1.18 METAL BEAM GUARDRAIL

##### 1.18.1 Measurement

Measurement for Metal Beam Guardrail will be made to the nearest linear foot horizontally along the centerline from end-to-end of the metal guardrail in place.

##### 1.18.2 Payment for Metal Beam Guardrail

Payment for Metal Beam Guardrail will be made at the applicable contract unit price, which payment shall constitute full compensation for the metal beam guardrail, complete, including posts, blocking, reflector assembly, flares, bridge transitions, terminal sections, all required earthwork and painting.

#### 1.19 CHAIN LINK FENCE AND GATES

##### 1.19.1 Measurement

Measurement of Chain Link Fencing will be made to the nearest linear foot horizontally along the centerline from end-to -end of the fence in place. Gates shall be measured per each based upon type.

##### 1.19.2 Payment of Chain Link Fence

Payment for Chain Link Fencing will be made at the applicable contract unit price, which payment shall constitute full compensation for the fencing, complete in place including concrete foundations.

##### 1.19.3 Payment for Chain Link Fence Gates

Payment for Chain Link Fence Gates will be made at the applicable contract price, which payment shall constitute full compensation for the gates, complete.

##### 1.19.4 Payment for Chain Link Fence with Slats

Payment for the Chain Link Fence with Slats will be made at the applicable contract unit price, which payment shall constitute full compensation for the fencing and slats, complete in place including concrete foundations.

##### 1.19.5 Payment for Pipe Gates

Payment for Pipe Gates will be made at the applicable contract price, which payment shall constitute full compensation for the gates, complete.

##### 1.19.6 Payment for Barbed Wire Fence

Payment for the Barbed Wire Fence will be made at the applicable contract unit price, which payment shall constitute full compensation for the fencing, complete in place including concrete foundations.

#### 1.20 SETTLEMENT PLATES

Measurement and Payment for Settlement Plates will be made at the applicable contract unit price per each, which payment shall constitute full compensation for providing the settlement plates, including all required earthwork, pipe and cap, mortar pad, timber posts, and bolts, complete.

#### 1.21 SURVEY MONUMENTS

Measurement and Payment for Survey Monuments will be made at the applicable contract unit price per each, which payment shall constitute full compensation for providing the survey monuments, including all required earthwork, pipe and cap, mortar pad, and bolts, complete.

## 1.22 STAFF GAGES

Measurement and Payment for Staff Gages will be made at the applicable contract unit price per each, which payment shall constitute full compensation for materials, and installation necessary for the work, complete in place.

## 1.23 HYDROSEEDING

## 1.23.1 Measurement and Payment for Hydroseeding

Measurement and Payment for Hydroseeding will be made at the applicable contract unit price per acre, which payment shall constitute full compensation for hydroseeding, complete, including soil preparation, soil admixtures, and maintenance.

## 1.23.2 Plant Establishment Period

Payment for "Plant Establishment Period" will be made at the contract lump sum price, shall include all maintenance watering and reseeding to establish 80 percent growth of hydroseed areas.

## 1.24 CONCRETE

## 1.24.1 Measurement

Measurement of concrete will be made on the basis of the actual volume of concrete per cubic yard within the pay line, of each item as indicated on the drawings. Measurement of concrete placed against the sides of any excavation without the use of intervening forms will be made only within the pay lines of the structure. No deductions will be made for rounded of beveled edges or space occupied by reinforcement, voids or embedded items which are either less than 5 cubic feet in volume or one square foot in cross section. Concrete wasted or used for the convenience of the Contractor will not be included in measurement for payment. No separate measurement will be made for concrete which is placed in structures for which payment is made on a lump sum basis.

## 1.24.2 Payment for Concrete, Intake Tower Structure

Payment for the Concrete, Intake Tower Structure will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials including formwork, portland cement, waterstops (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

## 1.24.3 Payment for Concrete, Transition Structure

Payment for the Concrete, Transition Structure will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials including formwork, portland cement, waterstops (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

## 1.24.4 Payment for Concrete, Outlet Conduit

Payment for the Concrete, Outlet Conduit will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials including formwork, portland cement, waterstops (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

#### 1.24.5 Payment for Concrete, Stilling Basin

Payment for the Concrete, Stilling Basin will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials including formwork, portland cement, waterstops (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

#### 1.24.6 Payment for Concrete, Drop Structure Retaining Wall

Payment for the Concrete, Drop Structure Retaining Wall will be made at the applicable contract unit price, which payment shall constitute full compensation for labor, materials including formwork, portland cement, waterstops, earthwork (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided. The earthwork included shall be only that earthwork which is located outside the limits of earthwork for which other payment is provided.

#### 1.24.7 Payment for Concrete, Outlet Works Sta. 21+02 to Sta. 49+93

Payment for the Concrete, Outlet Works Sta. 21+02 to Sta. 49+93 will be made at the applicable contract unit price, which payment shall constitute full compensation for labor, materials including formwork, portland cement (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided. The concrete cut off wall is included in this bid item.

#### 1.24.8 Payment for Concrete, Access Road

Payment of Concrete, Access Road will be made at the applicable contract unit price, which payment shall constitute full compensation for labor, materials including formwork, portland cement (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

#### 1.24.9 Payment for Concrete, Stop Log Storage Area

Payment of Concrete, Stop Log Storage Area will be made at the applicable contract unit price, which payment shall constitute full compensation for labor, materials including formwork, portland cement (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically

provided.

#### 1.24.10 Payment for Double Cable Trash Boom

Payment for the Double Cable Trash Boom will be made at the applicable contract lump sum price, which payment shall constitute full compensation for labor, materials including reinforced concrete anchors, cables, anchorage, connections, pontoons, and for all equipment and tools required to complete the work.

#### 1.24.11 Payment for Concrete, Lean Mix Concrete Backfill

Payment for the Concrete, Lean Mix Concrete Backfill will be made at the applicable contract price, which payment shall constitute full compensation for labor, materials including portland cement (except steel reinforcement for which other payment is provided), and for all equipment and tools required to complete the work. Embedded items shall be included in the cost of the concrete except when other payment is specifically provided.

### 1.25 CONCRETE REINFORCEMENT

#### 1.25.1 Measurement

The quantity of steel reinforcement, placed in concrete as described hereinbefore in paragraph: CONCRETE REINFORCEMENT will be measured on the basis of length of bars placed in accordance with the shop drawings or bar schedules. The measured lengths will be converted to weights for the size of bars listed by the use of the unit weights per linear foot contained in ASTM A 615. Steel in splices (in bars up to and including #11 bars) indicated on the contract drawings where directed or approved will be measured by payment. The unit of weight shall be tons (2,000 pounds). Embedded miscellaneous metal not paid for under other pay items shall be measured and paid for under Bid Item "Miscellaneous Steel and Metalwork."

#### 1.25.2 Payment

Payment for steel reinforcement, embankment will be made at the applicable contract unit price, which payment shall constitute full compensation to provided all reinforcing steel, except concrete reinforcement placed in concrete paid for on a lump sum basis for which separate payment is provided. Payment shall also include temporary support and spacing of the reinforcement.

### 1.26 STRUCTURAL STEEL

#### 1.26.1 Measurement

The quantity of structural steel items will be measured by weight in tons (2,000) as listed below.

- a. Computed weights per fabricated piece or assembly for the various pieces classified or shown on the shop drawings shall be indicated on the shop drawings submitted for approval. For pieces shown on Contractor-approved shop drawings, the computed weights shall be submitted for approval along with a copy of the Contractor-approved shop drawings. When measurement of complicated shapes can be determined more readily by scale weight per fabricated piece of assembly, certified scale weights may be used when specifically approved. Computed weights for payment

will be the net calculated weights based on the dimensions indicated on the shop drawings. The weight of rolled shapes and plates will be computed on the basis of their nominal weights and dimensions. In calculating the net weights, all copes, cuts, and all open holes except rivet and bolt holes will be deducted. No additional weight will be calculated for overweight allowance, protective coatings, allowance of milling, grip length or rivets and bolts, cut washers and butt, groove, and fillet welds. No measurement will be made for material wasted or used for the Contractor's convenience or which is not required. For computing the weight of the structural steel metal work use 0.283 pounds per cubic inch.

- b. Structural steel items can be measured by scale weights. Weights will be determined from the manufacturer's published net weights, or when these are not available, from the certified scale weights. Certified scale weights shall be furnished or the weighing shall be done in the presence of the Government. The weights shall be net weights without boxes, crates, containers, or supporting members required for packing or transportation. The weight of material used in additional items authorized for the convenience of the Contractor will be deducted from the scale weight. The weight to be deducted will be calculated using the nominal weight per cubic inch times the measured and/or calculated volumes of the additional items.

#### 1.26.2 Payment for Structural Steel

Payment of Structural Steel will be made at the applicable contract price, which payment shall constitute full compensation for providing the structural steel items listed in STRUCTURAL STEEL AND MISCELLANEOUS METAL including anchors, fasteners, accessories, welding, galvanizing, painting, and inspection, complete.

Item listed in STRUCTURAL STEEL AND MISCELLANEOUS METAL pertaining to regulating outlets slide gates, emergency closure gates, and low-flow bulkheads shall, however, be excluded from payment for structural steel, and which shall be included with the respective items for payment.

#### 1.27 MISCELLANEOUS STEEL AND METALWORK

Payment for miscellaneous steel and metalwork will be made at the applicable contract price, which payment shall constitute full compensation for providing the miscellaneous steel and metalwork items listed in STRUCTURAL STEEL AND MISCELLANEOUS METAL including anchors, fasteners, accessories, welding, galvanizing, painting, and inspection, complete.

#### 1.28 INTERCEPTOR DRAIN

##### 1.28.1 Measurement

Measurement for Interceptor Drain will be made to the nearest linear foot horizontally along the centerline from end-to-end of the concrete interceptor drain in place.

##### 1.28.2 Payment for Interceptor Drain

Payment for Interceptor Drain will be made at the applicable contract unit price, which payment shall constitute full compensation for furnishing and

placing concrete Interceptor Drain, including portland cement (except steel reinforcement for which other payment is provided), complete in place.

#### 1.29 V-DITCH

##### 1.29.1 Measurement

Measurement for V-Ditch will be made to the nearest linear foot horizontally along the centerline from end-to-end of the concrete v-ditch in place.

##### 1.29.2 Payment for V-Ditch

Payment for V-Ditch will be made at the applicable contract unit price, which payment shall constitute full compensation for furnishing and placing concrete V-Ditch, including portland cement, complete in place.

#### 1.30 STRUCTURES

##### 1.30.1 Payment for Control House Access Bridge

Measurement and Payment for Control House Access Bridge will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work, including but not limited to structure excavation and backfill, structural concrete, reinforcement, joints seals, elastomeric bearing pads and life railing, in place.

##### 1.30.2 Payment for Stilling Basin Access Road Bridge

Measurement and Payment for Stilling Basin Access Road Bridge will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work, including but not limited to precast voided slab units with concrete topping, reinforcing steel, joint seal, concrete barrier, and tubular hand railing, in place.

##### 1.30.3 Payment for Mechanically Stabilized Earth Walls

Measurement and Payment for Mechanically Stabilized Earth Walls will be made at the applicable contract unit price per square foot which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work including granular backfill material, leveling pad, concrete, steel reinforcing, soil reinforcing, joint materials, end sections, filter cloth and face panels, and instrumentation, complete in place.

##### 1.30.4 Payment for Generator and Storage Building

Measurement and Payment for Generator and Storage Building will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work, including but not limited to structure excavation and backfill, reinforced concrete walls, footing, floor slabs, lightweight concrete roof over metal deck and steel framing, louvers, and architectural features, in place.

##### 1.30.5 Payment for Gaging Station

Measurement and Payment for Gaging Station will be made at the applicable contract lump sum price including 48-inch diameter gage well, which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work, including but not limited to structure excavation and backfill, reinforced masonry walls, footing, floor slab, lightweight concrete roof over metal deck, vents door, and architectural features, in place.

#### 1.31 MSE INSTRUMENTATION

Payment for MSE Instrumentation will be made at the applicable contract lump sum price for all work related to the installation of the instrumentation for the MSE Walls, which shall constitute full compensation for providing all materials, complete in place.

#### 1.32 ELECTRICAL

##### 1.32.1 Payment for Well System Electrical Supply and Distribution

Measurement and Payment for Well System Electrical Supply and Distribution will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, and equipment required to complete the work, in place.

#### 1.33 GAGE STATION ELECTRICAL DISTRIBUTION

Payment for Gage Station Electrical Supply and Distribution will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, and equipment required to complete the work, in place.

#### 1.34 SEISMIC INSTRUMENTATION

Payment for Seismic Instrumentation will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, and equipment required to complete the work, in place, including concrete vault, piping, conduit, earthwork, electrical work and connections and other appurtenant items. Payment does not include the seismic instrument, which will be supplied by others.

#### 1.35 STOP LOGS

Measurement and Payment for Stop Logs will be made at the applicable contract lump sum price which payment shall constitute full compensation for all labor, materials, equipment and tools required to complete the work, including but not limited to structural steel, bolts, fasteners, guides, accessories, seals, welding, galvanizing, painting, and inspection, in place.

#### 1.36 REGULATING OUTLET SLIDE GATES

Payment for Regulating Outlet Slide Gates will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, fabricate, assemble, furnish, paint, install and test regulating outlet service gates, including gate frames (bodies), bonnets, bonnet covers and accessories, hydraulic power system, piping, valving, electrical controls, position indicating equipment, and other appurtenant items to make an operational system as specified in SECTION

11290, HYDRAULIC POWER SYSTEMS FOR REGULATING OUTLET GATES, SECTION 15097, REGULATING OUTLET SLIDE GATES, and SECTION 16051, CONTROL SYSTEM - REGULATING OUTLET GATES.

#### 1.37 EMERGENCY CLOSURE GATES

Payment for Emergency Closure Gates will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, fabricate, assemble, furnish, paint, install, and test two (2) 11-foot by 19.67-foot Emergency Closure Gates with two lifting (pick up) beams, and six (6) sets of gate frames, guides, seal seats, storage facilities and accessories as specified in SECTION 15095, EMERGENCY CLOSURE GATES FOR REGULATING OUTLETS.

#### 1.38 LOW-FLOW OUTLET CONTROL VALVES

Payment for Low-Flow Outlet Control Valves will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, furnish, paint, and install electric motor operated 36-inch, knife gate valves, operators, and appurtenant equipment in the low flow outlet works as specified in SECTION 15099, LOW FLOW OUTLET KNIFE GATE THROTTLING VALVES AND OPERATORS and SECTION 16052, CONTROL SYSTEM - LOW FLOW OUTLET THROTTLING AND SHUT-OFF VALVES.

#### 1.39 LOW-FLOW OUTLET SHUT-OFF VALVES

Payment for Low-Flow Outlet Shut-Off Valves will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, furnish, paint, and install electric motor operated 36-inch, butterfly shutoff valves, operators, and appurtenant equipment in the low flow outlet works as specified in SECTION 15098, BUTTERFLY SHUTOFF VALVE, OPERATORS AND ACCESSORIES, and SECTION 16052, CONTROL SYSTEM - LOW FLOW OUTLET THROTTLING AND SHUT-OFF VALVES.

#### 1.40 LOW-FLOW BULKHEAD

Payment for Low-Flow Bulkhead will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, fabricate, assemble, furnish, paint, install and test the 4-foot by 4-foot Maintenance Bulkhead with lifting (pick up) beam, gate frames, guides, seal seats, storage facilities and accessories for the low flow outlets as specified in SECTION 15096, MAINTENANCE BULKHEAD FOR LOW FLOW OUTLETS.

#### 1.41 UNDERHUNG CRANE

Payment for Underhung Crane will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, equipment, labor and materials, and performing all work necessary to complete the design and to fabricate, deliver, erect, install, paint, and test the regulating outlet (RO) gate room underhung bridge crane complete with underhung beams, monorail beam, hoist and controls.

#### 1.42 PIPING SYSTEMS

Payment for Piping Systems will be made at the applicable contract price, which payment shall constitute full compensation for providing all piping, fittings, valves, equipment, and appurtenances necessary to furnish and install the minimum discharge system piping, fill lines for RO water conduits, vent piping, and instrumentation piping, complete.

#### 1.43 PLUMBING

Payment for Plumbing will be made at the applicable contract price, which payment shall constitute full compensation for all plant, labor, equipment, appliances, and materials; and performing all operations in connection with the installation of plumbing of the Control Tower and the Generator and Storage Building, including but not limited to piping, fittings, valves, equipment, and appurtenances, complete as specified under SECTION 15400, PLUMBING, GENERAL PURPOSE. Payment will not be made for items such as the minimum discharge system piping, fill lines for RO water conduits, instrumentation piping, and washroom accessories for which separate payment is provided.

#### 1.44 WASHROOM ACCESSORIES

Payment for Washroom Accessories will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all equipment, labor, and materials, and performing all work necessary to complete the design and to deliver, erect, install, and test the washroom accessories as specified in SECTION 10800, WASHROOM ACCESSORIES.

#### 1.45 SEPTIC SYSTEM

Payment for Septic System will be made at the applicable contract price, which payment shall constitute full compensation for all plant, labor, equipment, appliances, and materials; and performing all operations in connection with the installation of the septic system, including septic tank, leach field, piping, connections, and associated earthwork, supports and appurtenant structures to a point 5 feet from the building, where the plumbing system for the Control Tower is terminated, complete as specified under SECTION 15400, PLUMBING, GENERAL PURPOSE and SECTION 02531, SANITARY SEWERS.

#### 1.46 HVAC SYSTEM

Payment for HVAC System will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, furnish, install and test the HVAC system and other appurtenant items to make an operational system as specified in SECTION 15950, HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS, SECTION 15990, TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS, and SECTION 15995, COMMISSIONING OF HVAC SYSTEMS.

#### 1.47 POWER DISTRIBUTION SYSTEM

Payment for Power Distribution System will be made at the applicable contract price, which payment shall constitute full compensation for all plant, labor, equipment, appliances, and materials; and performing all operations in connection with the installation of the power distribution, lighting, and telephone systems for the Control Tower and Generator and Storage Building, complete as specified in SECTION 16415, ELECTRICAL WORK, INTERIOR. No separate measurement and payment will be made under this bid

item for electrical or lighting work for which separate payment is provided.

1.48 GENERATOR SET

Payment for Generator Set will be made at the applicable contract price, which payment shall constitute full compensation for providing the diesel generator set, complete and totally functional, with all necessary ancillary equipment to include air filtration; starting system; generator controls, protection, and isolation; instrumentation; lubrication; fuel system; cooling system; and engine exhaust system as specified in SECTION 16264, DIESEL-GENERATOR SET, STATIONARY 15-300 KW, STANDBY APPLICATIONS.

1.49 FIRE PROTECTION SYSTEM

Payment for Fire Protection System will be made at the applicable contract price, which payment shall constitute full compensation for providing all equipment, accessories, and materials to design, furnish, install and test the central fire alarm system for the Outlet Control House complete and operational as specified in SECTION 13851, FIRE DETECTION AND ALARM SYSTEM and SECTION 13853, CENTRAL FIRE ALARM SYSTEM, DIGITAL ALARM COMMUNICATOR TYPE.

1.50 PASSENGER ELEVATOR

Payment for Passenger Elevator will be made at the applicable contract price, which payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment; and performing all work required to design, furnish, and install the elevator system and other appurtenant items to make an operational system as specified in SECTION 14320, ELEVATORS, ELECTRIC.

1.51 QUALITY ASSURANCE SUPPORT

Measurement and Payment for Contractor furnished Quality Assurance Support will be made at the applicable contract lump sum price which payment shall constitute full compensation for testing personnel, vehicles, equipment and supplies, labor, material and equipment required to provide Quality Assurance. Payment will be made on a percentage complete throughout the duration of the contract.

1.52 AS-BUILT DRAWINGS

Payment for As-built drawings will be made at the applicable contract price, which payment shall constitute full compensation for all costs incurred by the Contractor in the preparation and furnishing of approved as-built drawings in Intergraph Microstation electronic file format and printed hardcopies as specified in SECTION 01702, AS-BUILT DRAWINGS.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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## DIVISION 01 - GENERAL REQUIREMENTS

## SECTION 01312

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## SECTION 01312

## RESIDENT MANAGEMENT SYSTEM (RMS)

## PART 1 GENERAL

## 1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS-W) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS-Windows, referred to as RMS-QC (QC for Quality Control), to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS-W and RMS-QC will facilitate electronic exchange of information and overall management of the contract. RMS-QC provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

## 1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

## 1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01320, "Project Schedule", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through RMS-QC. Also, there is no separate payment for establishing and maintaining the RMS-QC database; all costs associated therewith shall be included in the contract pricing for the work.

## 1.2 RMS-QC SOFTWARE

RMS-QC is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the RMS-QC software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the RMS-QC software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide RMS-QC on 3-1/2"

high-density diskettes or CD-ROM. Any program updates of RMS-QC will be made available to the Contractor via the Government RMS Website as they become available.

### 1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run RMS-QC:

#### **Hardware**

IBM-compatible PC with 200 MHz Pentium or higher processor  
32+ MB RAM  
4 GB hard drive disk space for sole use by the RMS-QC system  
3 1/2 inch high-density floppy drive  
Compact disk (CD) Reader  
Color monitor  
Laser printer compatible with HP LaserJet III or better, with minimum 4 MB installed memory.  
Connection to the Internet, minimum 28 BPS

#### **Software**

Microsoft (MS) Access 97 or newer version database software  
MS Windows 95 or newer version operating system (MS Windows NT 4.0 or newer is recommended)  
Word Processing software compatible with MS Word 97 or newer  
Internet browser  
The Contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.  
Electronic mail (E-mail) compatible with MS Outlook

### 1.4 RELATED INFORMATION

#### 1.4.1 RMS-QC User Guide

After contract award, the Contractor shall download instructions for the installation and use of RMS-QC from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

#### 1.4.2 Contractor Quality Control (CQC) Training

The use of RMS-QC will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

#### 4.3 Video Training for RMS-QC

After contract award, the Contractor will be provided with a CD containing a training video on the use of RMS-QC.

#### 1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for RMS-QC. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

#### 1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the RMS-QC database throughout the duration of the contract. The Contractor shall establish and maintain the RMS-QC database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see paragraph: DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The RMS-QC database typically shall include current data on the following items:

##### 1.6.1 Administration

###### 1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

###### 1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in RMS-QC. Within 14 calendar days of receipt of RMS-QC software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

###### 1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

###### 1.6.1.4 Requests for Information

RMS-QC includes a means for the Contractor to enter, log, and transmit

requests for information (RFI) to the Government. RFIs can be exchanged electronically using the import/export functions of RMS-QC. The Contractor shall also provide the Government with a signed, printed copy of each RFI. All RFIs from the Contractor to the Government shall have the prefix "RFI" and shall be numbered sequentially beginning with RFI-0001.

#### 1.6.1.5 Equipment

The Contractor's RMS-QC database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

#### 1.6.1.6 EM 385-1-1, Corps of Engineers Safety Manual and RMS Linkage

Upon request, the Contractor can obtain a copy of the current version of the Safety Manual, EM 385-1-1, on CD. Data on the CD will be accessible through RMS-QC, or in stand-alone mode.

#### 1.6.1.7 Management Reporting

RMS-QC includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of RMS-QC. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

### 1.6.2 Finances

#### 1.6.2.1 Pay Activity Data

The RMS-QC database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

#### 1.6.2.2 Payment Requests

All progress payment requests shall be prepared using RMS-QC. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using RMS-QC. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

### 1.6.3 Quality Control (QC)

RMS-QC provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the RMS-QC generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within

the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

#### 1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

RMS-QC includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by RMS-QC shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the RMS-QC-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

#### 1.6.3.2 Deficiency Tracking.

The Contractor shall use RMS-QC to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC Comments.

The contractor shall maintain a current log of its QC comments in the RMS-QC database. The Government will log the deficiencies it has identified using its QA comments. The Government's QA comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA comments.

#### 1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS-QC.

#### 1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize RMS-QC to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

#### 1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the RMS-QC database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### 1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in RMS-QC. The Contractor shall update all data on these QC requirements as

work progresses, and shall promptly provide this information to the Government via RMS-QC.

#### 1.6.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns as described in Section 01330, SUBMITTAL PROCEDURES. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use RMS-QC to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using RMS-QC. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

#### 1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", or Section 01320, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the RMS-QC database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01320 PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

#### 1.6.6 Import/Export of Data

RMS-QC includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

### 1.7 IMPLEMENTATION

Contractor use of RMS-QC as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its RMS-QC database, and to provide the Government with regular database updates. RMS-QC shall be an integral part of the Contractor's management of quality control.

### 1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the RMS-QC built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

#### 1.8.1 File Medium

The Contractor shall submit required data on 3-1/2" double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

### 1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the RMS-QC file name, full contract number, project name, project location, data date, name and telephone number of person responsible for the data.

### 1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the RMS-QC software.

### 1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the RMS-QC database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable RMS-QC export file is received.

### 1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --

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SECTION 01320  
PROJECT SCHEDULE

PART 1 GENERAL

1.1 REFERENCES

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

ENGINEERING REGULATIONS (ER)

ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

### 3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

#### 3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

#### 3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

##### 3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

##### 3.3.2.2 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

##### 3.3.2.3 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

##### 3.3.2.4 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

##### 3.3.2.5 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

#### 3.3.2.6 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

#### 3.3.2.7 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

#### 3.3.2.8 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

#### 3.3.2.9 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

#### 3.3.2.10 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

### 3.3.3 Scheduled Project Completion

The schedule interval shall extend from NTP to the contract completion date.

#### 3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

#### 3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

#### 3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

#### 3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

##### 3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

##### 3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

##### 3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

#### 3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to

evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

### 3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

### 3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

## 3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph: SUBMISSION REQUIREMENTS.

### 3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 14 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP.

### 3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

### 3.4.3 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

### 3.4.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

## 3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every periodic project schedule update throughout the life of the project:

### 3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

#### 3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, under the MS-DOS Version 5. or 6.x, unless otherwise approved by the Contracting Officer.

#### 3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule, and the MS-DOS version used to format the disk.

#### 3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

### 3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the four most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

### 3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

### 3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall

be printed for those activities in progress or completed.

#### 3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

#### 3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph: Schedule Reports. A blank line shall be left between each activity grouping.

#### 3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

#### 3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

#### 3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

##### 3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

##### 3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

##### 3.5.5.3 Critical Path

The critical path shall be clearly shown.

#### 3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

#### 3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

### 3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

#### 3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

#### 3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

#### 3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

##### 3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed .

##### 3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

##### 3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

#### 3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

#### 3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

### 3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

#### 3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request.

The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

#### 3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

### 3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

### 3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

### 3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

-- End of Section --

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SECTION 01330

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-- End of Section Table of Contents --

## SECTION 01330

## SUBMITTAL PROCEDURES

## PART 1 GENERAL

## 1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

- SD-01 Preconstruction Submittals
- SD-02 Shop Drawings
- SD-03 Product Data
- SD-04 Samples
- SD-05 Design Data
- SD-06 Test Reports
- SD-07 Certificates
- SD-08 Manufacturer's Instructions
- SD-09 Manufacturer's Field Reports
- SD-10 Operation and Maintenance Data
- SD-11 Closeout Submittals

## 1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

## 1.2.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

## 1.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

## 1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.

Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

#### 1.5 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

### PART 2 PRODUCTS (Not used)

### PART 3 EXECUTION

#### 3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

#### 3.2 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS).

### 3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 15 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

### 3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

### 3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

#### 3.5.1 Procedures

Submittals shall be made to the Contracting Officer's Representative. Two copies of submittals for information only are required. Six copies are required for all other submittals.

#### 3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

### 3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

### 3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four (4) copies of the submittal will be retained by the Contracting Officer and two (2) copies of the submittal will be returned to the Contractor.

### 3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of

the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

### 3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

<p>CONTRACTOR</p> <p>(Firm Name)</p> <p>_____ Approved</p> <p>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

-- End of Section --

**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
ACTIVITY	TRANSMITTAL NO	SPEC	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVERNOR REVIEW	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	01200		SD-01 Preconstruction Submittals														
			Location of Contractor's Office	1.4													
			SD-02 Shop Drawings														
			Temporary Access and Haul Roads	1.9.2	G												
	01230		SD-01 Preconstruction Submittals														
			Accident Prevention Plan	1.5	G												
			SD-07 Certificates														
			Qualifications for Safety and Health Professionals(s)	1.14.1	G												
			Qualifications for Safety and Health Technicians	1.14.2	G												
			Delegation of Authority	1.14.3	G												
			Worker's compensation	1.13													
			Site-specific Safety and Health Plan	1.2.3	G												
			Activity Hazards Safety Analysis	1.6	G												
	01356		SD-07 Certificates														
			Storm Water Pollution Prevention Plan	1.4	G												
			Notice of Intent	1.4													
			Mill Certificate or Affidavit	2.1.3													
	01410		SD-01 Preconstruction Submittals														
			Environmental Protection Plan	1.2.3	G												
	01702		SD-11 Closeout Submittals														

**SUBMITTAL REGISTER**

CONTRACT NO.  
DACW09-02-B-0004

TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS				
					APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	01702		Submittal of the As-Built Field Data	3.1.2.1	G												
	02130		SD-01 Preconstruction Submittals														
			Cofferdam System	1.4	G												
			Water Control Plan	1.7	G												
	02200		SD-01 Preconstruction Submittals														
			Excavation Plan	1.9	G												
			SD-03 Product Data														
			Survey data	3.11.2	G												
			SD-05 Design Data														
			Rock reinforcement system														
			Cofferdam	3.1.1													
			SD-06 Test Reports														
			Testing of Gravel Blanket	3.8.2													
	02212		SD-08 Manufacturer's Instructions														
			Compaction Equipment	3.5.1													
			SD-06 Test Reports														
			Moisture content tests	3.6.1													
			Gradation tests	3.6.1													
			Density	3.5.2.1													
			Density	3.5.2.2													
			Compaction tests														
	02250		SD-06 Test Reports														
			Moisture content	1.5.1.2													
			Gradation	2.2													
			Density test	1.5.1													

**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	SPEC NO	PRADO DAM EMBANKMENT AND OUTLET WORKS	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	GOVERNMENT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
02316			SD-06 Test Reports														
			Field Density Tests	3.5.3													
			Testing of Backfill Materials	3.5.2													
02378			SD-04 Samples														
			Geotextile	2.1.1.1													
			SD-07 Certificates														
			Geotextile	2.1.1.1													
02410			SD-06 Test Reports														
			Flow tests	3.3.1	G												
			Sand filter and gravel drain materials	2.1													
			SD-07 Certificates														
			Subdrain Pipe	2.2													
02480			SD-02 Shop Drawings														
			Shop drawings		G												
			SD-05 Design Data														
			Design calculations	1.3.2	G												
			Instrumentation	1.3.3	G												
			Instrumentation	1.3.3	G												
			SD-07 Certificates														
			Soil Reinforcement and Attachment Devices	2.2													
			Joint Materials	2.3													
			SD-08 Manufacturer's Instructions														
			Instructions														
02510			SD-03 Product Data		G												

**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT REVIEW	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/	ACTION CODE	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER		ACTION CODE	DATE OF ACTION
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	02510		Pipe	2.1	G												
			Fittings	2.2	G												
			Joints	2.3	G												
			Valves	2.4	G												
			Couplings		G												
			Valve boxes	2.5	G												
			Water tanks		G												
			Meters	2.6.1.1	G												
			Chlorinator	2.10	G												
			SD-05 Design Data														
			Design calculations of water piping and alignment		G												
			Waste Water Disposal Method		G												
			Satisfactory Installation														
			Method for anchoring the water tank	3.1.11	G												
			SD-06 Test Reports														
			Bacteriological Disinfection	3.3.1	G												
			SD-07 Certificates														
			Water tank	2.11	G												
			Pump control valve coating		G												
			Hydrostatic testing	2.8.4	G												
			SD-08 Manufacturer's Instructions														
			Installation	3.1													



**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	PRADA DAM EMBANKMENT AND OUTLET WORKS	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
02522				Connection method	2.1.1	G											
				Well Screens	2.2	G											
				Centering devices	3.1.2	G											
				Borehole Logs													
				Permits		G											
				SD-04 Samples													
				Gravel-pack gradations	2.2.1.3												
				SD-06 Test Reports													
				Test for Plumbness and Alignment	3.3.1												
02531				SD-01 Preconstruction Submittals													
				Waste Water Disposal Method		G											
				SD-02 Shop Drawings													
				Fabrication drawings	2.7.2.2	G											
				36-inch Reinforced Concrete		G											
				Pipeline (RCP)													
				Method of Dewatering	3.1.2.1	G											
				SD-03 Product Data													
				Sanitary sewer piping, fittings, and joints		G											
				Manholes		G											
				Temporary Sewer Bypass System	3.5	G											
				Sewer Bypass Implementation	3.5.2	G											
				Plan													
				SD-05 Design Data													
				Design calculations of 36" RCP sewer piping		G											

**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
ACTIVITY	TRANSMITTAL NO	SPEC	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	02531		Design calculations of sewer manhole structures		G												
			Method of 36" S.A.R.I. Line reconnection		G												
			Invert elevations, lateral locations		G												
			Method of Restraint of 60-inch S.A.R.I. Line during construction of concrete encasement		G												
			SD-06 Test Reports														
			Pothole	1.2													
			SD-07 Certificates														
			Sanitary sewer piping, fittings, joints		G												
			Shop-applied lining and coating		G												
			Leakage Tests	3.1.3	G												
			Steel Manhole Structures														
			36-inch Reinforced Concrete Pipeline														
			Statement of Satisfactory Installation														
			SD-08 Manufacturer's Instructions														
			Installation procedures for sewer piping		G												
			Manufacturer's Installation Instructions for 36-inch RCP														
	02551		SD-03 Product Data														

**SUBMITTAL REGISTER**

CONTRACT NO.  
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TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT OR PRIVATE	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER		ACTION CODE	DATE OF ACTION
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
02551			Job Mix Formula	2.2.1	G												
			SD-06 Test Reports														
			Aggregates	1.8.1	G												
			Aggregate Gradation	3.11.2.1	G												
			Aggregate Moisture Content	3.11.2.2	G												
			Properties of Bituminous Mixtures	2.2.2	G												
			Asphalt Properties	3.11.2.3	G												
			Asphalt Content	3.11.2.4	G												
			Temperature	3.11.2.5	G												
			Density	3.11.2.6	G												
			Grade and Surface Smoothness	1.6	G												
			Thickness	3.11.2.7	G												
			SD-07 Certificates														
			Waybills and Delivery Tickets	1.11	G												
02600			SD-03 Product Data														
			Stone Sources	2.1.3													
			SD-05 Design Data														
			Method of placement	3.2.1	G												
			SD-06 Test Reports														
			Stone Quality Testing	2.1.4.2													
			Gradation Sampling and Testing	2.1.5.2													
			SD-07 Certificates														
			Waybills and Delivery Tickets	3.4.2													
02650			SD-05 Design Data														
			Grout Mix Design	2.3	G												
			SD-06 Test Reports														

**SUBMITTAL REGISTER**

CONTRACT NO.  
DACW09-02-B-0004

TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	PRADA #	DESCRIPTION ITEM SUBMITTED	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH		
(a)	(b)	(c)	(e)	(d)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
02650			2.1.1	Aggregates	G												
			2.1.2	SD-07 Certificates													
			2.2	Portland Cement	G												
			1.6	Curing Compound	G												
				Waybills and Delivery Tickets	G												
02720			2.1	SD-07 Certificates													
				Pipe for Culverts and Storm Drains	G												
			2.4.4	Frame and Cover for Gratings	G												
			3.2	SD-08 Manufacturer's Instructions													
02722				Placing Pipe													
				SD-03 Product Data													
			1.6	Plant, Equipment, and Tools													
			1.7	Waybills and Delivery Tickets													
				SD-06 Test Reports													
			1.4	Sampling and testing	G												
			1.4.3.2	Density Tests	G												
02821				SD-07 Certificates													
			2.1.1	Chain Link Fence	G												
02900				SD-03 Product Data													
				Equipment													
			1.4.1	Delivery													
			2.2	Topsoil	G												
			3.4	Quantity Check	G												
			3.8	Seed Establishment Period	G												
			3.8.3.5	Maintenance Record	G												

**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
ACTIVITY	TRANSMITTAL NO	SPEC SECT	PRADO DAM EMBANKMENT AND OUTLET WORKS	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT OR PRIVATE	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS	
								APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE FWD TO OTHER REVIEWER	ACTION CODE		DATE OF ACTION
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	02900		Maintenance Plan	3.8.3.1	G												
			Application of Pesticide	3.5	G												
			Wood cellulose fiber mulch and tackifier	3.3.2	G												
			SD-04 Samples														
			Delivered Topsoil	1.4.1.1	G												
			Soil Amendments	2.3	G												
			Mulch		G												
			SD-06 Test Reports														
			Equipment Calibration	3.1.3	G												
			Soil Test	3.1.4	G												
			SD-07 Certificates														
			Seed	2.1	G												
			Topsoil	2.2	G												
			pH Adjuster	2.3.1													
			Fertilizer	2.3.2													
			Organic Material	2.3.2													
			Soil Conditioner														
			Mulch														
			Pesticide	2.5	G												
	03101		SD-02 Shop Drawings														
			Shop Drawings	1.4													
			SD-03 Product Data														
			Materials	2.1													
			SD-04 Samples														
			Sample Panels	1.5	G												



**SUBMITTAL REGISTER**

TITLE AND LOCATION		CONTRACTOR															
TRANSMITTAL NO	ACTIVITY NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT A/E REVIEW	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	03200		SD-03 Product Data														
			Welding	1.3	G												
			SD-07 Certificates														
			Reinforcing Steel	2.1													
			Test Reports														
			Chemical Composition of Reinforcement Steel		G												
	03230		SD-02 Shop Drawings														
			Installation Drawings	3.1.2	G												
			SD-03 Product Data														
			Prestressing Method and Equipment	3.1.1	G												
			Materials Disposition Records	3.3													
			Prestressing Operations Records	3.1.7													
			SD-06 Test Reports														
			Stressing Tendons and Accessories	2.1													
			SD-07 Certificates														
			Certification of Prestressing Technicians	1.3													
	03305		SD-02 Shop Drawings														
			Plant Layout	3.1.2.5	G												
			Lift Drawings		G												
			SD-03 Product Data														
			Batch Plant	3.1.2	G												
			Mixers	3.1.3													

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TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS				
					APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
03305		Mixture Proportions	1.3	G													
		Construction Methods		G													
		SD-05 Design Data															
		Testing Technicians	3.8.1	G													
		Testing Technicians	3.8.1	G													
		Concrete Construction Inspector	3.8.1	G													
		Equipment for Conveying	3.3.1														
		Construction Joint Treatment	3.2.5	G													
		Curing and Protection	3.5	G													
		Cold Weather Placing	3.3.2.3	G													
		Hot-Weather Placing	3.3.2.2	G													
		Special Temperature-Controlled Concrete	3.3.2.4														
		SD-07 Certificates															
		Sheet Curing	3.5.4														
		Nonshrink Grout	2.1.6	G													
		Bonding Agents	2.1.8														
		Expansive Admixture	3.7.1														
		Color Admixture	2.1.2.5	G													
		Floor and Wall Tiles	2.1.10	G													
		Admixtures		G													
03310		SD-02 Shop Drawings															
		Roof Decking	3.1	G													
		SD-06 Test Reports															
		Field-Control Tests	3.6														
		SD-07 Certificates															

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TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT OR PRIVATE	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	03310	Mixing and proportioning	2.2	G													
	03371	SD-06 Test Reports															
		Mixture Proportions	1.4	G													
		Aggregates	2.1.2														
		Accelerator Compatibility	2.1.4.1	G													
		Preconstruction Test Panels	1.7														
		SD-07 Certificates															
		Portland Cement	2.1.1.1														
		Pozzolans	2.1.1.2														
		Accelerating Admixtures	2.1.4.1														
		Curing Materials	2.1.5														
		Qualifications	1.6	G													
	03415	SD-02 Shop Drawings															
		Erection	3.9	G													
		SD-03 Product Data															
		Erection Plan	3.9.4	G													
		Design Calculations	1.3.1.3														
		Concrete Mixture Proportions	2.2	G													
		Construction Records	3.10														
		SD-06 Test Reports															
		Materials	2.1														
		Concrete	1.3.2.2														
		SD-07 Certificates															
		Cement	2.1.1														
		Pozzolan	2.1.2														
		Air-Entraining Admixture	2.1.3.2														

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TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	PRADA G#	DESCRIPTION ITEM SUBMITTED	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH	
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	03415		2.1.3.2	Water-Reducing Admixture													
			2.1.3.2	Accelerating Admixture													
			2.1.3.1	Aggregates													
			1.3.2.3	Air Content													
	04200			SD-02 Shop Drawings													
				Masonry Work	G												
				SD-03 Product Data													
			2.2	Concrete Masonry Units (CMU)	G												
			3.1.2	Cold Weather Installation	G												
				SD-04 Samples													
			2.2	Concrete Masonry Units (CMU)	G												
			2.6	Anchors, Ties, and Bar Positioners	G												
				SD-06 Test Reports													
			3.11.1	Field Testing of Mortar	G												
			3.11.2	Field Testing of Grout	G												
			2.2	Cement	G												
			2.5	Cement	G												
				SD-07 Certificates													
			2.2	Concrete Masonry Units (CMU)													
			2.6	Anchors, Ties, and Bar Positioners													
			2.7	Reinforcing Steel Bars and Rods													
			2.4.2	Mortar Coloring													
			2.3	Precast Concrete Items													
			2.4.1	Mortar Admixtures													

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TRANSMITTAL NO	SPEC SECT	PRADO DAM EMBANKMENT AND OUTLET WORKS	DESCRIPTION ITEM SUBMITTED	PARRA # APP#	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES		CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS				
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	DATE FWD TO APPR AUTH/	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	DATE OF ACTION		DATE RCD FRM APPR AUTH			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
04200			Grout Admixtures	2.5.1													
05120			SD-02 Shop Drawings														
			Structural Steel System		G												
			Structural Connections		G												
			Miscellaneous Steel and Metalwork	3.3	G												
			SD-03 Product Data														
			Erection														
			SD-04 Samples														
			High Strength Bolts and Nuts	2.1.8.4													
			Carbon Steel Bolts and Nuts														
			Nuts Dimensional Style														
			Washers	2.1.8.9													
			SD-05 Design Data														
			Manufacturer's Data		G												
			SD-07 Certificates														
			Rubber Seals and Gaskets	2.1.11													
			Mill Test Reports														
			Welder Qualifications														
			Fabrication	2.1.9.2													
05501			SD-02 Shop Drawings														
			Detail Drawings	1.6	G												
			SD-03 Product Data														
			Nondestructive Examination	2.2.1.4													
			SD-05 Design Data														
			Lists of Materials		G												

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TRANSMITTAL NO	SPEC SECT	PRADO DAM EMBANKMENT AND OUTLET WORKS	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH
(a)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
05501			Welding Procedures		G											
			SD-06 Test Reports													
			Tests of Materials	1.3	G											
			Disposition Records													
			SD-07 Certificates													
			Qualification of Welders and Welding Operators	1.7	G											
05615			SD-02 Shop Drawings													
			Detail Drawings	2.3.1	G											
			SD-03 Product Data													
			Welding	2.3.3	G											
			Materials	2.1												
			Materials Disposition Records													
			SD-06 Test Reports													
			Tests, Inspections, and Verifications	2.4												
07510			SD-03 Product Data													
			Inspection	3.18	G											
			SD-07 Certificates													
			Bitumen	2.2												
			Felt	2.5												
			Cants	2.4												
			Warranty													
08110			SD-02 Shop Drawings													
			Doors	2.1	G G											
			Doors	2.1	G G											

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					APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	08110	Frames	2.1	G	G												
		Frames	2.1	G	G												
		Accessories															
		Weatherstripping	2.3														
		SD-03 Product Data															
		Doors	2.1	G													
		Frames	2.1	G													
		Accessories															
		Weatherstripping	2.3														
		SD-04 Samples															
		Factory finish	2.4	G													
		SD-07 Certificates															
		Bullet Resistant Fiberglass	2.2														
	08330	SD-02 Shop Drawings															
		Sectional Door Unit		G													
		SD-03 Product Data															
		Overhead Sectional Doors	2.1	G													
		SD-04 Samples															
		Color	2.1.13	G													
		SD-06 Test Reports															
		Bullet Proof Material Test															
		SD-10 Operation and Maintenance															
		Data															
		Operating Instructions	1.6														
		Maintenance Instructions	1.6														
	09310	SD-03 Product Data															

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							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	09310		Tile	2.1	G												
			Tile	2.1	G												
			Mortar and Grout														
			SD-04 Samples														
			Tile	2.1	G												
			SD-07 Certificates														
			Tile	2.1													
			Mortar, Grout, and Adhesive	2.4													
	09880		SD-02 Shop Drawings														
			PVC Liner		G												
			SD-03 Product Data		G												
			PVC Liner		G												
			SD-07 Certificates		G												
			PVC Liner		G												
			SD-08 Manufacturer's Instructions		G												
			PVC Liner		G												
			SD-09 Manufacturer's Field Reports														
			PVC Liner		G												
	09920		SD-03 Product Data														
			Coal Tar Coating for Pipeline														
			Polyurethane Coatings		G												
			Epoxy Coating														
			SD-08 Manufacturer's Instructions														
			Polyurethane Coatings		G												
	09940		SD-01 Preconstruction Submittals														

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ACTIVITY	TRANSMITTAL NO	SPEC	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	09940		Safety and Health Submittal	1.7.2.1	G												
			SD-04 Samples														
			Special Formulation Paints and Thinners		G												
			Federal Specification Paints and Thinners		G												
			Proprietary Brands of Paints		G												
			SD-06 Test Reports														
			Airborne Sampling	1.7.2.2													
	09950		SD-01 Preconstruction Submittals		G												
			Respiratory Protection Program														
			SD-04 Samples														
			Samples of the Coating System	1.3.1	G												
			SD-07 Certificates														
			Coating System	2.3													
			SD-09 Manufacturer's Field Reports														
			Coating Records	3.4													
	10800		SD-01 Preconstruction Submittals		G												
			Materials and Equipment														
			SD-02 Shop Drawings		G												
			Contract drawings														
			Locations of washroom accessories	3.1	G												
			SD-03 Product Data														
			Accessory Items		G												

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							APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE		DATE OF ACTION	DATE FWD TO APPR AUTH/ FROM CONTR
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
11290			SD-02 Shop Drawings	Shop Drawings		G											
			Shop Drawings	Hydraulic Schematic		G											
			Delivery Drawings	Field Installation Drawings		G											
			SD-03 Product Data	Manufacturer's Catalog Data		G											
			SD-06 Test Reports	Test Reports	3.3.3.4												
			SD-08 Manufacturer's Instructions	Shop Assembly and Testing	2.3	G											
			Cleaning and Flushing	Field Testing	3.1.2 3.3.1	G											
			SD-10 Operation and Maintenance	Data													
			Operation and Maintenance	Manual		G											
13080			SD-02 Shop Drawings	Bracing and Coupling	3.1	G											
			Flexible Couplings or Joints	Resilient Vibration Isolation	3.3 3.7	G											
			Devices	Bridge Cranes and Monorails	3.16	G											
			Lighting Fixtures in Buildings	Sway braces for duct work, piping, and other equipment	3.14	G											

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(a)	(b)	(c)	(e)	(d)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	13080			Day tank and skid base fuel tank seismic restraints	G												
				Electrical cabinets mounting brackets	G												
				Ventilation duct and diesel engine-generator set exhaust duct brackets	G												
				SD-05 Design Data													
			3.16	Bridge Cranes and Monorails	G												
			3.1	Bracing and Coupling	G												
			3.14	Lighting Fixtures in Buildings	G												
			3.13	Miscellaneous Equipment	G												
				SD-07 Certificates													
				Crane, hoist equipment, and day tank													
			2.1.3.1	Flexible Ball Joints													
	13120			SD-03 Product Data													
			2.1	Digital Camera													
			2.2	Photo Management System													
	13310			SD-03 Product Data													
				Flowmeters and Console													
				SD-10 Operation and Maintenance Data													
				Flowmeters and Console	G												
	13851			SD-02 Shop Drawings													
			1.4.1	Fire Alarm Reporting System	G												

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ACTIVITY	TRANSMITTAL NO	SPEC NO	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS			
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	ACTION CODE	DATE FWD TO OTHER REVIEWER	DATE OF ACTION	DATE RCD FRM APPR AUTH		MAILED TO CONTR/		
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	13851		SD-03 Product Data														
			Storage Batteries	2.2	G												
			Voltage Drop		G												
			Special Tools and Spare Parts	2.7.3	G												
			Training	3.4													
			Testing	3.3	G												
			SD-06 Test Reports														
			Testing	3.3													
			SD-07 Certificates														
			Equipment		G												
			Qualifications		G												
			SD-10 Operation and Maintenance														
			Data														
			Technical Data and Computer		G												
			Software														
	13853		SD-02 Shop Drawings														
			Central Fire Alarm System	3.3	G												
			Wiring Diagrams		G												
			SD-03 Product Data														
			Battery	2.1.5	G												
			Spare Parts	2.7.3	G												
			Central Fire Alarm System	3.3	G												
			Training	3.4													
			Test Procedures		G												
			SD-06 Test Reports														
			Testing	3.3	G												

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TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	CLASSIFICATION	GOVT OR PRIVATE	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS		
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	13853		SD-07 Certificates Equipment Installer	3.2	G												
	14210		SD-02 Shop Drawings Elevator System		G												
			SD-03 Product Data Operator Training Elevator System	3.7	G												
			Framed Instructions Test Procedures	3.6	G												
			SD-04 Samples Finishes		G												
			SD-06 Test Reports Testing	3.5													
			SD-07 Certificates Qualifications	1.3													
			SD-10 Operation and Maintenance Data Elevator System		G												
	14320		SD-02 Shop Drawings Shop Drawings		G												
			SD-05 Design Data Design Calculations		G												
			SD-07 Certificates Manufacturer's Certification		G												

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TRANSMITTAL NO	ACTIVITY NO	SPEC SECTION	PRADA #	DESCRIPTION ITEM SUBMITTED	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES		CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS				
						APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	DATE RCD FRM APPR AUTH		
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	14320			SD-10 Operation and Maintenance Data													
				Operation and Maintenance Manuals	G												
	15080			SD-04 Samples Thermal Insulation Materials													
	15095			SD-02 Shop Drawings													
			1.5	Shop Drawings	G												
			1.5	SD-05 Design Data	G												
				Design Calculations													
				SD-06 Test Reports													
				Test Data	G												
				SD-08 Manufacturer's Instructions													
				Installation Instructions	G												
				SD-10 Operation and Maintenance													
				Data													
				Operating and Maintenance Manuals	G												
	15096			SD-02 Shop Drawings													
			1.4	Shop Drawings	G												
				SD-05 Design Data													
			1.4	Design Calculations	G												
				SD-08 Manufacturer's Instructions													
				Installation Instructions	G												
				SD-10 Operation and Maintenance													
				Data													

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TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH#	GOVT CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY			REMARKS				
					APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		DATE RCD FRM APPR AUTH			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
15096		Operating and Maintenance Manuals		G													
15097		SD-02 Shop Drawings		G													
		Shop Drawings	1.5														
		SD-05 Design Data		G													
		Design Calculations	1.5														
		SD-08 Manufacturer's Instructions		G													
		Installation Instructions															
		SD-10 Operation and Maintenance															
		Data															
		Operating and Maintenance		G													
		Manuals															
15098		SD-02 Shop Drawings		G													
		Shop Drawings															
		SD-03 Product Data		G													
		Materials	2.3														
		SD-05 Design Data		G													
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## SECTION 01356

## STORM WATER POLLUTION PREVENTION MEASURES

## 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 D 4439	(1997) Standard Terminology for Geosynthetics
ASTM D 4491	(1996) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996)) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1995) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(1995) Identification, Storage, and Handling of Geosynthetic Rolls

## 1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01410 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit attached to that Section.

## 1.3 SUBMITTALS

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

## SD-07 Certificates

Storm Water Pollution Prevention Plan; G  
Notice of Intent

Provide certification of the NOI filing and provide a copy of the certified SWPPP.

## Mill Certificate or Affidavit

Certificate attesting that the Contractor has met all specified requirements.

## 1.4 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

The project requires an NPDES permit from the California State Water Resources Control Board, Division of Water Quality. The Contractor shall obtain a NPDES Construction Storm Water Permit from the State Water Resources Control Board, which requires development and implementation of Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall maintain a current copy of the plan on-site throughout the construction period, and shall comply with all provisions of the plan. Within a minimum of two (2) days prior to the start of construction activities, the Contractor shall submit a Notice of Intent (NOI) to:

State Water Resources Control Board (SWRCB)  
Division of Water Quality  
ATTN: Storm Water Permit Unit  
P.O. Box 1977  
Sacramento, CA 95812-1977

Copies of the Notice of Intent and Storm Water Pollution Prevention Plan shall be provided to the Contracting Officer.

## 1.5 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

## 1.5.1 Stabilization Practices

The stabilization practices to be implemented shall include mulching, geotextiles, erosion control mats, protection of trees, preservation of mature vegetation, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have temporarily or permanently ceased.

## 1.5.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

## 1.5.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

### 1.5.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices.

#### 1.5.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

#### 1.5.2.2 Straw Bales

The Contractor shall provide bales of straw as a temporary structural practice to minimize erosion and sediment runoff. Bales shall be properly placed to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, bales shall be placed as work progresses, bales shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where straw bales are to be used are shown on the drawings. Final removal of straw bale barriers shall be upon approval by the Contracting Officer. Rows of bales of straw shall be provided as follows:

- a. Along the downhill perimeter edge of all areas disturbed.
- b. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.
- c. Along the toe of all cut slopes and fill slopes of the construction areas.
- d. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas.
- e. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales.
- f. At the entrance to culverts that receive runoff from disturbed areas.

#### 1.5.2.3 Diversion Dikes

Diversion dikes shall have a maximum channel slope of 2 percent and shall be adequately compacted to prevent failure. The minimum height measured from the top of the dike to the bottom of the channel shall be 18 inches. The minimum base width shall be 6 feet and the minimum top width shall be 2 feet. The Contractor shall ensure that the diversion dikes are not damaged

by construction operations or traffic. Diversion dikes shall be located as shown on the drawings.

## PART 2 PRODUCTS

### 2.1 COMPONENTS FOR SILT FENCES

#### 2.1.1 Filter Fabric

The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

#### FILTER FABRIC FOR SILT SCREEN FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	100 lbs. min.
Elongation (%)		30 % max.
Trapezoid Tear	ASTM D 4533	55 lbs. min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

#### 2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

#### 2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the filter fabric.

#### 2.1.4 Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

## 2.2 COMPONENTS FOR STRAW BALES

The straw in the bales shall be stalks from oats, wheat, rye, barley, rice, or from grasses such as byhalia, bermuda, etc., furnished in air dry condition. The bales shall have a standard cross section of 14 inches by 18 inches. All bales shall be either wire-bound or string-tied. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 2 inches x 2 inches in cross section and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 3 feet.

## PART 3 EXECUTION

### 3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

### 3.2 INSTALLATION OF STRAW BALES

Straw bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 18 inches deep into the ground to securely anchor the bales.

### 3.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.

#### 3.3.1 Silt Fence Maintenance

Silt fences shall be inspected in accordance with paragraph INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade.

### 3.3.2 Straw Bale Maintenance

Straw bale barriers shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier.

Bale rows used to retain sediment shall be turned uphill at each end of each row. When a straw bale barrier is no longer required, it shall be removed. The immediate area occupied by the bales and any sediment deposits shall be shaped to an acceptable grade.

### 3.3.3 Diversion Dike Maintenance

Diversion dikes shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged diversion dikes and necessary repairs shall be accomplished promptly. When diversion dikes are no longer required, they shall be shaped to an acceptable grade.

## 3.4 INSPECTIONS

### 3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

### 3.4.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

### 3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report

summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

### 3.5 Annual Compliance Certification

The Contractor shall complete the annual certification requirement that all construction activities are in compliance with the requirements of this SWPPP and the General Permit. certify annually that construction activities are in compliance with the requirements of the General Permit and the SWPPP. This Certification shall be based upon the regular site inspections as specified above. The certification must be completed and submitted to the RWQCB by July 1 of each year.

### 3.6 Noncompliance Reporting

Should the Contractor be unable to certify compliance, in accordance with paragraph "Annual Compliance Certification" and/or has had other instances of noncompliance, shall notify the appropriate RWQCB within 30 days. Corrective measures shall be implemented immediately following discovery that water quality standards were exceeded. The notifications shall identify the noncompliance event, including an initial assessment of any impact caused by the event; describe the actions necessary to achieve compliance; and include a time schedule subject to the modifications by the RWQCB indicating when compliance will be achieved. Noncompliance notifications must be submitted within 30-calendar days of identification of noncompliance.

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## SECTION 01410

## ENVIRONMENT PROTECTION

## PART 1 GENERAL

## 1.1 SUBMITTALS

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

## SD-01 Preconstruction Submittals

Environmental Protection Plan; G

## 1.2 ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of land, water, and air, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

## 1.2.1 Quality Control

The Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. The Contractor shall record on daily reports any problems in complying with laws, regulations and ordinances and corrective action taken.

## 1.2.2 Subcontractors

The Contractor shall ensure compliance with this section by subcontractors.

## 1.2.3 Environmental Protection Plan

The Contractor shall submit an environmental protection plan within 5 days after receipt of the notice to proceed and prior to initiating river diversion or dewatering activities. Approval of the Contractor's plan will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Government reserves the right to make changes in the Contractor's

environmental protection plan and operations as necessary to maintain satisfactory Environmental Protection Performance. The Contractor will be in complete environmental compliance with the Phase II GDM Santa Ana Mainstem Supplemental Environmental Impact Statement dated August 1988 and the Prado Basin Supplemental Final Environmental Impact Statement/Environmental Impact Report dated November 2001. The Government reserves the right to halt construction operations at the expense of the Contractor should the Contractor be found in non-compliance with the environmental protection plan approved by the Contracting Officer. Construction operations would resume when compliance is met. The environmental protection plan shall include, but shall not be limited to, the following:

- a. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits. Copies of permits including a permit to operate from the SCAQMD and State Water Resources Control Board, shall be included in the Environmental Protection Plan.
- b. Methods for protection of features to be preserved within authorized work areas like trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archaeological, and cultural resources.
- c. Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the environmental protection plan.
- d. Location of the solid waste disposal area.
- e. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
- f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
- l. Noise control plan including features and mitigation measures identified and discussed further in this section. Proposed design and construction methodology for noise barriers as required in shall be provided to the Corps' Environmental Resources Branch (Hayley Lovan, Ecosystem Planning Section, phone: (213) 452-3863, fax: (213) 452-4204.)
- g. Traffic control plan including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather, and the amount of mud transported onto paved public roads by vehicles or runoff.
- h. Methods of protecting surface and ground water during construction activities, including an erosion control plan.
- i. Plan showing the proposed activity in each portion of the work area and identifying the areas of limited use or nonuse. Plan

should include measures for marking the limits of use areas.

- j. Drawing of borrow area location. Protection measures required at the work site shall apply to the borrow areas including final restoration for subsequent beneficial use of the land.
- k. Traffic control safety plan for approval by the Contracting Officer indicating the methods and procedures he proposes to use to ensure the safe movement of all vehicles within the project area. The plan shall be coordinated with the local transportation authorities who will be affected by the construction activities. In addition, the plan shall address the scheduling of deliveries to be spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions. The plan shall be submitted within 14 calendar days after receipt of Notice to Proceed. The Contractor shall submit to the Contracting Officer revisions to the construction traffic pattern 3 days prior to implementing revisions.
- l. Written procedures limiting the idling of construction equipment at construction sites to ten minutes or less.
- m. Written procedures to be followed to suspend the use of powered equipment during second-stage smog alerts within one hour of notification.
- n. A map identifying the equipment refueling and maintenance areas, locations of hazardous waste storage, materials stockpiles, mobile equipment staging, and parking areas.
- o. A hazardous materials transport plan identifying preferred traffic routes to and from the construction staging sites and construction sites.
- p. Records documenting the training of all project construction workers involved in the use of hazardous materials took place prior to the start of project construction.
- q. An Emergency Response Plan including but not limited to locations of hazardous waste spill kits, specific procedures for hazardous materials spill containment and public notification, and notification of local emergency service providers.
- r. Locations of signs both on the construction site (limiting speeds to 25 m.p.h. and construction hours to 7:00 AM to 7:00 PM weekdays and 9:00 AM to 6:00 PM Saturdays) and on impacted streets as part of the overall traffic mitigation plan.
- m. Training for Contractor's and Subcontractor's personnel during the construction period on all environmental protection measures and procedures.
- v. A fire prevention and protection plan, including methods for reducing the risk of fires that may be inadvertently caused by construction activities, such as the location of water trucks and assurances of adequate training for personnel.

#### 1.2.4 Permits

The Contractor shall comply with all requirements under the terms and conditions set out in the permits obtained in accordance with Section 01200 GENERAL REQUIREMENTS and as specified herein.

#### 1.2.5 Preconstruction Survey

Prior to starting any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs and grassed areas and active stream channels immediately adjacent to work sites and adjacent to the assigned storage area and access routes as applicable. This report will be signed by both the Contracting Officer and the Contractor upon mutual agreement as to its accuracy and completeness.

#### 1.2.6 Meetings

The Contractor shall meet with representatives of the Contracting Officer to alter the environmental protection plan as needed for compliance with the environmental pollution control program.

#### 1.2.7 Notification

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action when approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions.

#### 1.2.8 Payment

No separate payment will be made for work covered under this section; all costs associated with this section shall be included in the contract unit and/or lump sum prices in the Bidding Schedule.

### 1.3 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify the land resources to be preserved within the work area. Existing root systems shall be left in place to the maximum extent possible. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

#### 1.3.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

#### 1.3.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

#### 1.3.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

#### 1.3.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
- b. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated on the drawings. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative. Silt fences shall be installed as necessary to prevent sediment from entering surface waters.

#### 1.3.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed as specified in Section 01200 GENERAL REQUIREMENTS, paragraph: Location of Contractor's Office. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant

and/or work areas shall be controlled to protect adjacent areas from despoilment.

#### 1.4 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

##### 1.4.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water, or the waste water shall be removed and disposed of in accordance with all applicable regulations for waste water disposal.

##### 1.4.2 Cofferdam and Diversion Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to limit the impact of water turbidity on the habitat for wildlife and on water quality for downstream use.

##### 1.4.3 Stream Crossings

Stream crossings shall be approved by the Contracting Officer. The stream crossings, when permitted, shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State or local government.

##### 1.4.4 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations. Federal listed endangered species known to occur in the project area and their nesting or spawning periods are listed below:

Least Bell's Vireo (*Vireo bellii pusillus*) March to August

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) May to August

Santa Ana Sucker (Norco Bluffs population): August to December

Santa Ana Sucker (Prado and Reach 9 populations): No time restriction

##### 1.4.4.1 Clearing

The Contractor shall clear vegetation associated with project construction within potential vireo or flycatcher riparian (cottonwood-willow, willow, mulefat scrub) habitat only between 15 August and 28 February.

#### 1.4.4.2 Noise Barriers

The Contractor is responsible for maintaining noise levels in the adjacent riparian habitat to 60 decibels (A-weighted) or less from 1 March through 15 August throughout the project area at all times. This may be accomplished through the use of temporary sound barrier walls, or other mitigation measures established to prevent sound intrusions into adjacent least Bell's vireo habitat (i.e., along the access road east and southeast of the dam, along the southwestern border of the basin, and between the borrow sites and adjacent riparian vegetation). The proposed design and construction methods shall be approved by the Contracting Officer Representative prior to installation, and included in the Environmental Protection Plan. Pre-construction and construction monitoring reports shall be faxed to the project biologist at the close of each monitoring day (Hayley Lovan, fax number 213 452-4204).

Specific monitoring requirements and exemptions for 1 March through 15 August construction activities within or adjacent to occupied vireo or flycatcher habitat are as follows:

- a. Prior to the commencement of construction activities, throughout a single 12-hour period (7:00 AM to 7:00 PM), the Contractor shall take hourly measurements of ambient noise levels at 50 feet and 100 feet from the proposed boundaries of the construction sites, and record the information in a graphic format.
- b. Prior to March 1, the Contractor shall construct sound barriers or implement other noise mitigation measures at the boundary of the proposed construction site and/or haul route. If establishment of sound barriers prior to March 1 is precluded by excessive inundation, the Contractor shall place the sound barrier around the perimeter of the construction zone as soon as conditions are dry enough to permit placement.
- c. Where ambient noise is less than 60dBA, and it is determined that construction-related noise levels may exceed 60dBA: The Contractor shall monitor noise levels three (3) times per day while construction equipment is operating. Monitoring shall be conducted at 50 feet and 100 feet from the sound wall, or at the boundary of occupied habitat (if habitat areas are more than 100 feet from the construction site), to ensure that construction-related noise does not exceed 60dBA within these areas. If construction noise levels exceed authorized limits, the Contractor shall modify the sound barriers, equipment, or procedures (including construction schedules) as necessary to meet these conditions.
- d. Where pre-construction ambient noise is greater than 60dBA: The Contractor shall monitor noise levels three (3) times per day while construction equipment is operating. Monitoring shall be conducted at 50 feet and 100 feet from the sound wall, or at the boundary of occupied habitat (if habitat areas are more than 100 feet from the construction site), to ensure that construction does not result in a 5dBA increase over ambient conditions. If construction noise levels exceed authorized limits, the Contractor shall modify the sound barriers, equipment, or procedures (including construction schedules) as necessary to meet these conditions.

e. Sound curtains and noise monitoring shall not be required at the south side of the dam, and within the outlet channel.

#### 1.5 AIR RESOURCES

The Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict Accordance with the State of California, Including the South Coast Air Quality Management District (SCAQMD), and all Federal emission and performance laws and standards. The SCAQMD's threshold for temporary construction sites is a cumulative PKIO emission of 384 lb/day. The Contractor shall contact the SCAQMD, 1-800-242-4666, for additional Information concerning the emission requirements. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Special management techniques as set out below shall be implemented to control air pollution by the construction activities which are included in the contract. Monitoring of air quality shall be the Contractor's responsibility. All air areas affected by the construction activities shall be monitored by the Contractor. Monitoring results will be periodically reviewed by the Government to ensure compliance.

##### 1.5.1 Particulates

Dust particles; aerosols and gaseous by-products from all construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned in paragraph: Air Resources, above to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall sweep streets in the project vicinity once a day if visible soil material is carried to adjacent streets.

##### 1.5.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times. The Contractor shall suspend use of powered equipment during second-stage smog alerts within one hour of notification.

##### 1.5.3 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

##### 1.5.4 Wind-speed Monitoring

The Contractor shall install wind-speed monitoring equipment at the construction site(s) at locations approved by the Contracting Officer. The monitoring equipment shall record and display the peak 10-second gust of wind during each hour of construction. The Contracting Officer shall suspend excavation, grading, or other particulate-generating activities when winds (peak 10-second gusts) exceed 25 miles per hour.

#### 1.5.5 Transport of Materials

All trucks hauling dirt, sediment or other loose materials from construction site are to be covered or shall maintain at least 2 feet of cover from the top edge of the truck to the material being hauled.

#### 1.5.6 Construction Equipment and Vehicles

All mobile or fixed equipment used on the project shall comply with all regulations which fall under jurisdiction of local, state, or federal agencies, and as discussed further in this section.

- a. The Contractor shall provide certification from a third-party certified mechanic prior to the start of construction, stating the timing of all diesel-powered construction equipment engines have been retarded by two degrees before top center on all construction equipment that was manufactured before 1996, and which do not have an existing IC engine warranty with the manufacturer.
- b. The Contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating all diesel-powered construction equipment engines are utilizing high-pressure fuel injectors in all construction equipment that was manufactured before 1996, and which do not have an existing IC engine warranty with the manufacturer.
- c. Pre-chamber diesel engines shall be used and properly maintained and operated.
- d. Catalytic converters shall be used on all gasoline equipment (except for small generator engines).
- e. Equipment shall be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than 3 minutes per hour and use low-sulfur fuel as required by SCAQMD regulation.

##### 1.5.6.1 Electrically-Powered Equipment

Electrically-powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible as discussed further in this section.

##### 1.5.6.2 Traffic Signs

The Contractor shall use only solar powered traffic signs (no gasoline-powered generators shall be used).

#### 1.5.7 Sound Intrusions (Human Environment)

The Contractor shall keep construction activities under surveillance and

control to minimize environmental damage by noise. The Contractor shall identify sensitive receptors (i.e., schools, residences, and hospitals) within possible sound range of the work site. The Contractor shall use methods and devices to control noise emitted by the construction activities and equipment to acceptable levels during all hours of operation. Use of existing vegetation and tree cover, constructing earth berms, or other methods will be required for noise control near the businesses in the borrow areas.

#### 1.5.7.1 Noise Monitoring Plan

The Contractor shall submit to the Contracting Officer a noise monitoring plan for the borrow sites and other work areas within possible sound range of sensitive receptors described above..

#### 1.5.7.2 Hearing Protection

Contractor's personnel shall be provided with appropriate hearing protection devices as specified in EM 385-1-1.

### 1.6 WASTE DISPOSAL

Disposal of wastes shall be as specified in Section 02100 CLEAR SITE AND REMOVE OBSTRUCTIONS and as specified below.

#### 1.6.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste.

#### 1.6.2 Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Wastes shall be removed from the work area and disposed of in accordance with Federal and local laws and regulations.

#### 1.6.3 Hazardous Wastes

The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing and shall collect waste in suitable containers observing compatibility. The Contractor shall transport hazardous waste off Government property and dispose of it in compliance with Federal and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility.

#### 1.6.4 Fuels and Lubricants

Fueling and lubrication of equipment and motor vehicles shall be conducted on impervious aprons and shall be in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil to be discarded shall be stored in marked corrosion-resistant containers and

recycled or disposed in accordance with Federal, State, and local laws and regulations.

#### 1.6.5 Burning

Open burning of rubbish, debris, and other combustibles will not be permitted.

#### 1.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological and cultural resources within the Contractor's work area will be so designated by the Contracting Officer and precautions taken to preserve all such resources as they existed at the time they were pointed out to the Contractor. The Contractor shall install all protection for these resources so designated on the drawings and shall be responsible for their preservation during this contract. A Corps archaeologist will also be monitoring all ground disturbing construction activities. In addition to all ground disturbing construction activities, installation of the fence will also be monitored. The Contractor shall contact Stephen Dibble (213) 452-3849, Senior Corps Archaeologist, prior to construction commencing to coordinate archeological monitoring activities. If during construction activities the Contractor observes unusual items that might have historical or archaeological value, such observations shall be reported as soon as practicable to the Contracting Officer. Recording and preservation of historical and archaeological finds during construction activities are specified in the SECTION 01200: GENERAL REQUIREMENTS.

#### 1.8 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction. If the operation in any area is terminated for any reason, all equipment, buildings, structures and refuse associated with the operation shall be removed from the site, all hazards mitigated, and reclamation initiated within 90 days.

#### 1.9 RESTORATION OF STREAMBED

The Contractor shall successfully restore all areas of active streambed that is temporarily disturbed during construction-related activities, to the conditions documented in the pre-project survey. Restoration will include:

- a. Replacement of pre-construction substrates and microhabitat features;
- b. Maintenance or re-establishment of natural channel morphology (e.g., stream meanders, pool-riffle complexes);
- c. Maintenance or reestablishment of surface flows; and
- d. Verification from the Contracting Officer that the structure and composition of the restored area is similar to pre-construction conditions.

#### 1.10 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with the plan submitted for

approval by the Contracting Officer. This work will be accomplished at the Contractor's expense.

#### 1.11 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

#### 1.12 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control. Prior to initiating work, personnel shall be made aware of the ecological importance of the surrounding habitat areas, the presence of federal and state-listed threatened and endangered species (including bald eagles, least Bell's vireos, southwestern willow flycatchers, and Santa Ana suckers), and legal ramifications for unauthorized taking of endangered species.

Each employee, contractor, or subcontractor involved in project construction (including temporary, contractors, and subcontractors) will be briefed on the following information prior to working within or near areas that may affect threatened and endangered species: 1) general types and locations of sensitive habitats and federally listed and proposed species that may occur in the action area; 2) measures that will be taken to avoid and minimize incidental take during construction activities; 3) reporting procedures for observation of federally listed species; 4) reporting requirements for incidents involving harm or disturbance to listed species; 5) information regarding whom to contact (i.e., the Contracting Officer) to report intentional or accidental non-compliance with environmental protection measures outlined in this Specification; and 6) applicable permit conditions stipulated by the California Department of Fish and Game, California Regional Water Quality Control Board, SCAQMD, and other permitting agencies.

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## SECTION 01451

## CONTRACTOR QUALITY CONTROL

## 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 E 329 (1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

## U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-2-1906 (1986) Laboratory Soils Testing

## 1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

## 3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

## 3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than

30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 15 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

### 3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.

- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

## 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 15 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

## 3.4 QUALITY CONTROL ORGANIZATION

### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff

shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be an experienced construction person with a minimum of seven (7) years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties and shall be employed by the prime Contractor. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

#### 3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: mechanical, civil, structural, materials technician. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals shall have no other duties other than quality control .

#### Experience Matrix

	Area	Qualifications
a.	Civil	Graduate Civil Engineer with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience
b.	Mechanical	Graduate Mechanical Engineer with 2 yrs experience or person with 5 yrs related experience
d.	Structural	Graduate Structural Engineer with 2 yrs experience or person with 5 yrs related experience

#### 3.4.4 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times.

When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES and in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS). The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

### 3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

#### 3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be

performed has been accepted by the Contracting Officer.

- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 72 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

### 3.7 TESTS

#### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

#### 3.7.2 Testing Laboratories

##### 3.7.2.1 Validation

Validation is a process to verify that the laboratory is qualified to perform required tests. Prior to commencing quality control testing each laboratory to be utilized by the Contractor shall be validated for compliance with ASTM E 329, Engineering Manual EM 1110-2-1906, or the project specifications, as applicable. Revalidation is required every two years. In addition, the Government reserves the right to check at any time laboratory equipment in the laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedure and techniques. If the selected laboratory fails the validation inspection, or needs more than one laboratory validated, the Contractor will be assessed a charge of \$4,000 to reimburse

the Government for each additional laboratory or recheck. Such costs will be deducted from the contract amount due the Contractor.

### 3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

### 3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Contracting Officer.

## 3.8 COMPLETION INSPECTION

### 3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph: DOCUMENTATION.

The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected.

Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

### 3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from the District Office and the Local Sponsor may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor

as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

The Contractor shall further keep and furnish to the Contracting Officer accurate logs and records of all operations pertaining to the preparation and excavation procedures. The records shall be submitted daily with the Quality Control Report and shall include the following: The number, size, type and make of all equipment used in the excavated process.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall

be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### 3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

### 3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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## SECTION 01500

## QUALITY ASSURANCE

## 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 D 3740 (1999b) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

## 1.2 QUALITY ASSURANCE TESTING PERSONNEL

The Contractor shall provide all necessary labor to perform quality assurance on-site sampling and laboratory testing. This is separate and in addition to those personnel the Contractor requires for his Quality Control testing requirements. The Contractor shall also provide a suitable number of foreman to act as liaisons between Government supervisors and Contractor's personnel performing quality assurance testing. The foreman shall be responsible for the productivity rates achieved by the technicians and laborers furnished by the Contractor.

## 1.2.1 Personnel

The Contractor shall continuously furnish a minimum of 1 supervisory laboratory technician, 2 laboratory technicians, and 1 laborer per work shift to perform sampling, testing, data reduction, surveying, volume calculations, and related work under the direct and exclusive supervision of the Contracting Officer for the duration of the contract. If this work force is inadequate, as determined by the Contractor's schedule, to perform all testing and quality assurance work as outlined in the paragraph: Minimum Quality Assurance Test Requirements, then the Contractor shall furnish additional personnel to accomplish this testing. The original acceptance and the continuing acceptability of all Contractor furnished personnel shall at all times be determined only by the Contracting Officer. The relationship existing between the Contractor and these personnel shall be free of coercion or other obligation to the Contractor, and from any conflict of interest, potential conflict of interest or duress as determined by the Contracting Officer. To ensure this end, the Contractor-furnished personnel cannot be terminated or transferred by the Contractor, after acceptance by the Contracting Officer, without just cause and without written permission of the Contracting Officer. The technicians shall each be laboratory testing specialists qualified to perform all sampling, testing and recording, interpreting test results and related work as required by the Government quality assurance program.

### 1.2.2 Qualifications

Each technicians shall have not less than two (2) years experience, satisfactory to the Contracting Officer, employed in testing laboratories established primarily for sampling, testing and control excavation and placement of soil materials as compacted fill. The supervising laboratory technician shall have 5 years of experience as outlined by ASTM D 3740 and ASTM C 1077 and shall be responsible for ensuring clean, well organized, and responsive testing operations, and prompt accurate test reports. Experience shall include demonstrable understanding and capabilities sufficient to perform all quality assurance and acceptance sampling and testing and related work.

### 1.2.3 Concrete Inspectors

The supervisory laboratory technician, laboratory technicians, and laborers participating in concrete inspection shall be certified to a minimum Level I Concrete Inspector as specified by the American Concrete Institute (ACI) or other equivalent licensing agency. They shall have a minimum of five years general experience in the practice of concrete inspection. They shall be currently licensed by the ACI or other approving agency for at least two years prior to their employment on the work described herein. Written certification of inspector qualifications, copies of certificates, and employment histories shall be submitted to and approved by the Contracting Officer at least 7 days prior to the commencement of any work requiring concrete inspection. Concrete inspection includes aggregate source development or sampling of materials by the Contractor; selection of sources of cements, pozzolans, and admixtures are not included in this requirement.

## 1.3 QUALITY ASSURANCE VEHICLES

The Contractor shall furnish eight (8) vehicles for use by Government personnel during the contract period. The vehicles shall be new 4 door model Chevrolet mini-Blazers, or equal, 4x4, equipped with high floatation all terrain tires, automatic transmission, air conditioning, AM/FM radio, heavy duty suspension, and other appropriate options for use in heavy duty off road conditions. Each vehicle shall be equipped with a towing package, which shall include a hitch ball for a 2-inch ball coupler; heavy-duty flasher; automatic transmission cooler; safety chain; mirror for towing; and all weather ball and receiver tube covers. Each vehicle shall also be equipped with a steel shovel and a 5 lb. ABC type fire extinguisher, readily accessible to the driver. The vehicles shall be suitable for the intended purpose and shall remain the property of the Contractor and be removed from the site at the completion of the contract.

### 1.3.1 Delivery

The Contractor shall deliver the vehicles within thirty (30) days after receipt of the Notice to Proceed.

### 1.3.2 Licenses and Fees

The Contractor shall be responsible for all vehicles registration fees, licenses, and inspections required by the State of California throughout the contract period. The vehicles shall be licensed for highway use.

### 1.3.3 Maintenance

Upon delivery of the vehicles, and continuing throughout the duration of the contract, complete maintenance shall be provided for the Quality Assurance vehicles. Quality of services shall be to the normal standards of commercial service stations. Servicing and/or repairs of vehicles shall be started when the vehicle is received at the Contractor's service area and completed with reasonable promptness. Maintenance shall consist of the regular furnishing of gas and oil in the vehicle, washing, steam cleaning, lubrication consisting of 2,000-mile lube, 4,000-mile oil and filter change, or more if recommended by the vehicle manufacturer, tire services and any major or minor repair of body or fenders, transmission, rearend, engine, brakes, steering, front-end, radiator, etc. All necessary parts and supplies, and consumables shall be Contractor-furnished. The vehicles shall be washed and the interior of all vehicles shall be cleaned every week and the motor and undercarriage shall be steam cleaned as directed. Whenever gas or oil is furnished, windshields shall be washed, tires inflated to proper pressure, brake fluid level checked and filled if necessary, and the battery filled to proper levels. Gasoline and oil shall be of the quality recommended by the vehicle manufacturer. The Contractor may elect to contract with a local commercial service station and/or service garage in the immediate local vicinity of the damsite to provide these maintenance services, so long as all of the above required services can be provided. If more than 2 of the Contractor-furnished vehicles are being served at any particular time, the Contractor shall immediately provide a replacement vehicle of equal quality as a replacement. Maintenance shall also include the servicing of the 5 lb. fire extinguishers.

#### 1.3.4 Storage of Vehicles

Open parking space for quality assurance vehicles shall be located convenient to the PradoDam Resident Office complex as approved by the Contracting Officer. The parking area shall be enclosed with a chain link fence approximately 6 feet high with a 10-foot wide lockable gate, accessible at all times. The fenced area shall be of sufficient size to permit ease in the parking of vehicles. Materials for fence and gate need not be new provided they area adequate for the intended use.

#### 1.4 CONTRACTOR FURNISHED LABORATORY TESTING EQUIPMENT AND SUPPLIES

The Contractor shall procure and install equipment; supply and maintain testing laboratories for the exclusive use of the Contracting Officer for purposes of quality assurance/acceptance testing and data reduction. The laboratory buildings shall be equipped, supplied, and be operational within sixty (60) calendar days after receipt of Notice to Proceed. The Contracting Officer will use these facilities to perform government quality assurance laboratory tests, data acquisition, and activities deemed necessary by the Contracting Officer.

##### 1.4.1 Calibration of Equipment

The Contractor shall be responsible for all testing equipment calibration. Calibration of testing equipment shall be performed as recommended by the manufacturer of the equipment, but in no case shall calibration be performed less often than annually.

##### 1.4.2 Sources for Laboratory Testing Equipment

Catalogs of suppliers may be obtained from the following:

- (a) Soiltest, 86 Albrecht Drive, Lake Bluff, Illinois
- (b) Humboldt Mfg., 7300 W. Agatite Ave., Norridge, Illinois
- (c) California Hardware, 13085 E.Temple Ave., City of Industry, CA
- (d) Empire Scale Co., 301 South Los Angeles St., Los Angeles, CA

#### 1.5 CONCRETE TESTING EQUIPMENT

The following laboratory equipment shall be provided as part of the Test Laboratory facility for concrete tests. Unless otherwise noted, the catalog number indicated for the equipment is from Soiltest Inc (5th Edition). All equipment supplied shall be of the type and specifications provided from the catalog numbers listed. Alternate equipment may be supplied as approved by the Contracting Officer.

QUANTITY	CATALOG NUMBER	DESCRIPTION
4	EI34-6764	3'x2'x8' Concrete curing tanks Conforming to water storage requirements of ASTM C 511
4	EI34-6767/01	Cure tank heaters with circulating pumps
1	VF5-0114-2N	Fume Hood (4 ft.) VWR Scientific Co.
1	VF5-3301-B2	Blower moter for fume hood VWR Scientific Co.
1	VF5--114-A4	"Kemresin" top for fume hood VWR Scientific Co.
1	VFG-2088-00	Base cabinet for 4-ft. fume hood VWR Scientific Co.
1	N/A	Sufficient ducting to extend through the roof of laboratory building VWR Scientific Co.
100		5 gal plastic buckets w/lids
30 cases	EI34-5294	Plastic concrete cylinder molds (6 x 12 ) with lids 14A Industries
2	EI34-5295	Stripping tools
30 bags	EI34-6102	Capping compound, 50lb bag

#### 1.6 SOIL TESTING EQUIPMENT

The following laboratory equipment shall be provided as part of the Test Laboratory facility for soil tests. Unless otherwise noted, the catalog number indicated for the equipment is from Soiltest Inc (5th Edition). All equipment supplied shall be of the type and specifications provided from the catalog numbers listed. Alternate equipment may be supplied as approved by the Contracting Officer.

QUANTITY	CATALOG NUMBER	DESCRIPTION
4 pair	EI88-7920	Hi-temp gloves
2	EI88-1040	2100 gram scale Ohaus Empire Scale Co.
36	29816329	Bicuit Pan California Hardware Co.
12	33002817	Plastic Pan California Hardware Co.
12	27840089	Roasting Pan California Hardware Co.
1	EI24-9095/12	Calibration Kit
1		Storage Container 10'x 10'x 20' with double wide doors
4	EI29-3739	Proving Ring Penetrometer

#### 1.7 CONSTRUCTION METHODS OBSERVATION

Any construction method, plant, or piece of equipment used on this contract shall not be considered proprietary, and can be inspected or photographed at any time by the Government, regulatory agencies, or any group approved by the Government.

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## SECTION 01702

## AS-BUILT DRAWINGS

## 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.

U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER (ERDC)

ERDC/ITL TR-01-6

(2001) A/E/C Cadd Standard

## 1.2 SUBMITTALS

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

SD-11 Closeout Submittals

Submittal of the As-Built Field Data; G

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

## 3.1 AS-BUILT FIELD DATA

## 3.1.1 General

The Contractor shall prepare and furnish the as-built drawings for the project. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the contract work. In event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the as-built drawings, the Contractor shall furnish revised and/or additional drawings as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the as-built drawings included in the original submission. The drawings shall show the following information, but not be limited thereto:

(a) The location and description of any utility lines or other installations of any kind or description known to exist within the

construction area. The location includes dimensions to permanent features.

(b) The location and dimensions of any changes within the building or structures.

(c) Correct grade or alignment of dam embankment, roads, channels, structures or utilities if any changes were made from contract plans.

(d) Correct elevations if changes were made in site grading or placement of materials in the dam embankment.

(e) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, dimensions of equipment foundations, etc.

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

(g) All changes or modifications which result from the final inspection.

(h) Where contract drawings or specifications allow options, only the option actually used in the construction shall be shown on the as-built drawings. The option not used shall be deleted.

### 3.1.2 Preliminary As-Built Drawings

The Contractor shall maintain one (1) set of full size, blue-line prints marked up in red to show the as-built conditions. This set of as-built prints shall be kept current and available at the job site at all times. All changes from what is shown on the contract plans, whether it be from changes requested by the Contracting Officer or resulting from additional information which might be uncovered in the course of construction, shall be accurately and neatly recorded as they occur by means of details and notes. The marked-up as-built prints will be jointly inspected for accuracy and completeness by the Contracting Officer and Contractor prior to submission of each monthly pay estimate. Failure to keep the As-Built Field Data current shall be sufficient justification to withhold a retained percentage from the monthly pay estimate. Information to be included on these preliminary drawings shall conform to the requirements as stated above. Any and all as-built modifications shall be reflected on all sheets affected by the modifications.

#### 3.1.2.1 Submittal of the As-Built Field Data

One (1) full size set of marked up drawings with the as-built field data shall be submitted to the Contracting Officer for review and approval a minimum of 20 calendar days prior to the date of final inspection. If review of the preliminary as-built drawings reveals errors and/or omissions, the drawings will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the drawings to the Contracting Officer within 10 calendar days of receipt.

### 3.2 AS-BUILT ELECTRONIC FILE DRAWINGS

### 3.2.1 General

No later than 30 days after final acceptance a complete set of as-built drawings shall be submitted in Intergraph MicroStation electronic file format. The as-built drawings shall be done in a quality equal to that of the originals. Line work, line weights, and lettering, and use of symbols shall be the same as the original line work, line weights, and lettering, and symbols. If additional drawings are required they shall be prepared in electronic file format under the same guidance. When final revisions have been completed, each drawings shall be identified with the words "AS-BUILT" in block letters at least 3/8-inch high placed above the title block if space permits, or if not, below the title block between the border and the trim line. The date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest revision notation.

### 3.2.2 Original Files

Upon Contractor's request the Government will provide the Contractor one set of Intergraph MicroStation electronic file format contract drawings, to be used for as-built drawings. The electronic file drawings will be available on CD-ROM media, 3-1/2 inch high density magnetic disks, or an 8-mm data cartridge (Contractor's choice).

### 3.2.3 Electronic File Submittal Requirements

#### 3.2.3.1 File Submittals

The MicroStation electronic file(s) deliverable shall be in MicroStation version 5.0 'DGN' binary format. All support files required to display or plot the file(s) in the same manner as they were developed shall be delivered along with the files. These files include but are not limited to Font Libraries, Pen Tables, and Referenced files.

#### 3.2.3.2 Drawing Format

Layering shall be performed in accordance with the Tri-Service CADD/GIS Technology Center's Architectural, Engineering and Construction (A/E/C) CADD Standards manual, ERDC/ITL TR-01-6, version 2.0. An explanatory list of which layer is used at which drawing and an explanatory list of all layers which do not conform to the guidelines shall be provided with each submittal.

#### 3.2.3.3 Electronic File Deliverable Media

All electronic files shall be submitted on CD-ROM media. Two complete sets of disks shall be submitted along with one complete set of prints taken from the disks. The electronic files shall be delivered on ISO 9660 format CD-ROM media. Due to the limited ability to mark on CD-ROM media, only the Contractor's firm name, project name and location, submittal type (AS-BUILT) and date will be required. Each submittal shall be accompanied by a hard copy transmittal sheet that contains the above information along with a description of each file provided in the submittal.

### 3.3 FINAL AS-BUILT DRAWINGS

The final as-built record drawings shall be completed and returned together with the approved preliminary as-built drawings to the Contracting Officer within 30 calendar days of final acceptance. The Contracting Officer will review all final as-built record drawings for accuracy and conformance to

the drafting standards and other requirements contained in DIVISION 1 GENERAL REQUIREMENTS. The drawings shall be returned to the Contractor if corrections are necessary. The Contractor shall make all corrections and shall return the drawings to the Contracting Officer within 7 calendar days of receipt. Upon final approval, the Contractor shall furnish two (2) full size sets and two (2) half size sets of the final as-built plans on reproducible mylars, and the electronic as-built project files. All project files, whether revised or not, shall be provided to the Contracting Officer.

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