

SPECIFICATIONS

for

Property of  
Flood Control District of MC Library  
Please Return to  
2801 W. Durango  
Phoenix, AZ 85009

**INDIAN BEND WASH**

**INTERCEPTOR CHANNEL**

**MARICOPA COUNTY, ARIZONA**

**GILA RIVER BASIN, ARIZONA**

FLOOD CONTROL DISTRICT  
RECEIVED

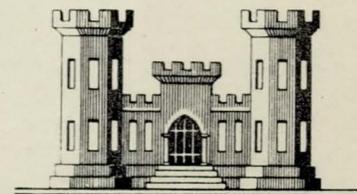
SEP 8 '80

<i>[Signature]</i>	HYDRO
<i>[Signature]</i>	LMgt
ADMIN	SUSP
3	FCC Library
1	DESTROY
<i>[Signature]</i>	
REMARKS	

Appropriation: 96x3122 Construction General  
Corps of Engineers, Civil

96x8862 Contributed Funds, Other

U S Army Engineer District  
Los Angeles  
Corps of Engineers



A680.503

Reference: DACW09-80-B-0047-0004

Bid Opening Date: 9 October 1980

U. S. ARMY ENGINEER DISTRICT  
P. O. Box 2711  
Los Angeles, California 90053

1 October 1980

AMENDMENT NO. 4

1. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona" and Amendment No. 3, dated 25 September 1980, and the drawings are modified as follows:

16. INVITATION FOR BIDS

16.1 Page 1-1. Delete the Bid opening date "7 October 1980" and insert: 9 October 1980

17. AMENDMENT NO. 3

17.1 Page 1.

17.1.1 Modification No. 11.1.1. Delete "Paragraph 1.1" and insert: Paragraph 1.

17.1.2 Modification No. 11.1.4, line 5. Delete "cut off wall for" and insert: cut off wall at the upstream end of completed lining for

17.1.3 Modification No. 12.1, line 8. Delete "Stockpiled Materials shall be" and insert: Materials stockpiled therein shall be placed between the access road and construction easement line. All material stockpiled as specified herein shall be

18. SPECIAL PROVISIONS

18.1 Page S-1.

18.1.1 Paragraph 1.1, line 2. Delete "14 October 1980" and insert: 16 October 1980.

18.1.2 Paragraph 1.2.2, line 1. Delete "The Contractor" and insert: Except as specified hereinafter, the Contractor.

18.1.3 After paragraph 1.2.3 add:

1.2.4 Required Disposal Areas. The Contractor shall complete work within the disposal areas indicated as scheduled hereafter:

Description	Completion Date
Disposal Area No. 1	Within 30 calendar days after notice to proceed
Disposal Area No. 2	Prior to 28 February 1981
Disposal Area No. 3	Prior to 30 November 1980
Disposal Area No. 4	Prior to 1 January 1981
Disposal Area No. 5	Prior to 1 January 1981

18.1.4 Paragraph 2, line 5. Delete "the sums of \* \* \* day of delay." and insert: the following sums separately for each day of delay:

Am. 4  
ARMY - C. of E. - Los Angeles

18.1.5 After paragraph 2, add:

2.1 Construction of Interceptor Channel as specified in subparagraph 1.2.1; \$170.00

2.2 Construction of Required Disposal Areas as specified in subparagraph 1.2.4; \$170.00

2.3 Construction of remaining work including cleanup; \$170.00

18.2 Page S-2, paragraph 3.1, Insert "Revision A" after the following District File Nos; 244/113, 244/116, 244/117, 244/118, 244/119, 244/121, 244/127, and 244/128.

19. SECTION 1A, GENERAL REQUIREMENTS

19.1 Page 1A-5. After paragraph 10.6.2.3 add:

10.6.3 Excavation within the Interceptor Channel is presently being accomplished by others. Excavation by others will be completed not later than 12:00 midnight on 18 October 1980 and the drawings and specifications reflect the projected conditions as of that date.

10.6.4 Topsoil Fill Stockpile Areas. Fill material suitable for topsoil fill has been stockpiled in the areas indicated. Topsoil material shall be removed from the stockpile area and used in the work. Material from the stockpile area within the Contractors Work Area may be placed in other stockpile areas prior to completion of placement of topsoil fill. After removal of materials from stockpile areas, the sites shall be restored to a condition satisfactory to the Contracting Officer and the areas shall be graded to drain.

20. SECTION 1B, MEASUREMENT AND PAYMENT

20.1 Page 1B-1.

20.1.1 Index. After listing of paragraph 14, insert: 15. Wire Mesh

20.1.2 Paragraph 2.1

20.1.2.1 Line 2. Delete "within the channel" and insert: within the canal and channel

20.1.2.2 Line 6. Delete "utility lines; removal" and insert: utility lines; removal of existing concrete side slope lining.

20.2 Page 1B-2. At end of paragraph 4.2.1 add: Where fill material, such as topsoil, is obtained from existing stockpiles, this payment shall also include loading and hauling.

20.3 Page 1B-4.

20.3.1 Delete "15. ADJUST MANHOLE TO GRADE" and insert: 14. ADJUST MANHOLE TO GRADE.

20.3.2 Delete "16. WIRE MESH" and insert: 15. WIRE MESH

20.3.3 Delete "16.1 Measurement" and insert: 15.1 Measurement.

20.3.4 Delete "16.2 Payment" and insert: 15.2 Payment

21. SECTION 2B, CLEARING SITE AND REMOVING OBSTRUCTIONS

21.1 Page 2B-2

21.1.1 Delete paragraph 4.1 and 4.2 and insert:

4.1 General. The Required Disposal Areas shall be used as herein after specified. The Salt River Landfill Disposal Site may be used at the option of the Contractor for materials as specified hereinafter.

Am. 4  
ARMY - C. of E. - Los Angeles

4.2 Required Disposal Areas. The Required Disposal Areas are indicated on the drawings. Material shall consist of excavated material suitable for required fills. Requirements for use of these areas is specified in section: EXCAVATION.

22. SECTION 2C, EXCAVATION.

22.1 Page 2C-1, paragraph 5, line 7. Delete "trench be made" and insert: trench shall be made.

22.2 Page 2C-2. Delete paragraph 7 and insert:

7. DISPOSAL OF EXCAVATED MATERIALS. Excavated materials suitable for required fills shall be placed in temporary stock piles or used directly in the work. Excess materials suitable for fills shall be placed in the required disposal sites. Material in excess of the quantities to be placed in required fill areas will become the property of the Contractor and removed from the site. Excavated material not suitable for fills and unsatisfactory materials shall be disposed of in the Salt River landfill Disposal Site as specified in section: CLEARING SITE AND REMOVING OBSTRUCTIONS. No excavated materials or waste of any kind shall be disposed of at any place beyond the limits of the work under this contract without express authority. Prior to placing material, disposal and stockpile areas shall be cleared of trash and vegetation. Vegetation shall be cut off at the existing ground line. Clearing shall conform to the applicable requirements of the section: CLEARING SITE AND REMOVING OBSTRUCTIONS. Stockpile and disposal fills shall be placed in a manner to preclude ponding of water.

7.1 Required Disposal Sites. Placement of excess excavated materials in required disposal sites shall be in accordance with the following priorities and quantities:

<u>Site No.</u>	<u>Priority of Placement</u>	<u>Required Quantity</u>
1	1	12,000 cy
2	2	6,000 cy
3	3	40,000 cy maximum
4	4	60,000 cy maximum
5	5	60,000 cy maximum

Excess excavated material shall be placed to a maximum height of 6 feet in the required disposal sites. Placement of material shall be from north to south in Site No. 3 and from south to north in Site No. 4. There are no restrictions on the placement in the other disposal sites. Compaction other than that obtained by the controlled movement of construction equipment will not be required. The Contractor shall complete disposal operations in Site No. 1 before placing any material in other disposal sites. The Contractor shall then complete disposal operations in other sites as determined by the priority number specified herein.

23. SECTION 2E, FILLS AND SUBGRADE PREPARATION.

23.1 Page 2E-3

23.1.1 Delete paragraph 4. and insert: 4. COMPACTED Fill, CANAL AND CHANNEL.

23.1.2 Delete paragraph 4.1 and insert: 4.1 Invert and Side Slopes.

23.1.3 Paragraph 4.1.2, line 2. Delete "95 percent" and insert: 90 percent

23.1.4 Paragraph 5.1, lines 2 and 3. Delete "invert in the paragraph: COMPACTED FILL, CHANNEL" and insert: side slopes and invert in the paragraph: COMPACTED FILL, CANAL AND CHANNEL.

Am. 4  
ARMY - C. of E. - Los Angeles

23.2 Page 2E-4

23.2.1 Paragraph 6.1.4. Delete "95 percent" and insert: 90 percent.

23.2.2 Delete paragraph 7.1 and insert:

7.1 Subgrade for Topsoil Material. After the channel has been excavated to rough grade, the entire subgrade shall be trimmed to a uniform grade and smoothed to make the subgrade ready to receive topsoil within the Interceptor Channel. If the subgrade is disturbed by the Contractor's operations or is over excavated, the subgrade shall be restored to grade and compacted to a density of 90 percent of maximum density. The finished surface of the subgrade shall not be more than ½ inch from the indicated grade at any point when tested with a 10-foot straightedge.

23.3 Page 2E-5. After paragraph 7.3 add:

7.4 Subgrade for Arizona Canal Invert and Side Slopes. The native foundation materials will adequately support the channel invert provided the materials are not made spongy, weavy, ratty, or otherwise unstable by the action of the construction equipment. In some locations the foundation materials are fine grained, have high moisture contents, and are highly susceptible to loss of stability under the action of construction equipment. Where unstable conditions are created, the Contractor shall treat the foundation to provide a stable subgrade for operation of construction equipment and for subsequent placement of concrete. The treatment shall consist of aeration of the native materials, or moisture reduction by other approved methods, or shall consist of removal and replacement with satisfactory materials from other sources. The depth and extent of required treatment will depend on the tire pressure, wheel loading; and frequency and repetition of loading by the construction equipment. Any material that is disturbed in place, or any materials used to replace unstable material shall be compacted to a density of at least 90% of maximum density. Prior to placement of concrete the entire invert subgrade for the canal shall be trimmed to a uniform grade and smoothed. The finished surface of the subgrade shall not be more than ½ inch from the indicated grade at any point when tested with a 10-foot straightedge.

8. TOPSOIL FILL. Topsoil Fill material has been stockpiled on the site in the areas indicated. This material shall be used for topsoil fill for the invert and side slopes of the Interceptor channel. Topsoil material shall be free from sod, roots, brush, debris, trash or other objectionable material, and shall contain no stone larger than 3 inches. Each layer of fill shall be compacted to not less than 85 percent of maximum density. Excess topsoil material shall be removed and disposed as specified in section: CLEARING SITE AND REMOVING OBSTRUCTIONS. In the event additional topsoil material is necessary, it shall be obtained from sources approved by the Contracting Officer.

24. SECTION 2J, STONE PROTECTION.

24.1 Page 2J-1, paragraph 2.1, line 4. Delete 45 days and insert: 15 days

25. SECTION 3A, CONCRETE

25.1 Page 3A-2, paragraph 4.3

25.1.1 Line 1. Delete "Curing materials" and insert: Except for the Arizona Canal lining, curing materials

25.1.2 At end of paragraph 4.3 add: curing material for the Arizona Canal lining shall be white pigmented membrane-forming curing compound.

25.1.3 Page 3A-2, paragraph 5.3. Delete "slump shall be 2 to" and insert: slump shall not exceed

25.2 Page 3A-3

25.2.1 Paragraph 9.1. Delete "unless otherwise indicated \* \* \* 10 feet on center."

Am. 4

ARMY - C. of E. - Los Angeles

25.2.2 Delete paragraph 9.2

25.2.3 Delete paragraphs 12 and 12.1 and insert:

12. CONCRETE FINISHES.

12.1 Recorder House Floor and Roof Slabs. Finished floor and roof slabs shall be true plain surfaces with no deviations in excess of 1/8 inch when tested with a 10-foot straightedge. Surfaces shall be screeded and floated to the required finish level with no coarse aggregate visible before finishing as specified below.

12.1.1 Monolithic Finish shall be given to recorder house floor and roof slabs. After the surface moisture has disappeared, floated-surfaces shall be steel trowled to a smooth, even, dense finish free from blemishes including trowel marks. Roof surfaces shall be lightly steel-troweled and left free of ridges and other projections.

12.2 Arizona Canal Invert. Finish other than that which is produced by the normal placing and finishing equipment will not be required. Finished invert surface shall be left free of ridges and other projections. The contractor shall not operate equipment on the finished invert until at least 60 hours after placement.

12.3 Spillway and Driveways. Exposed surfaces of the spillway and driveways shall be screeded with straightedges to bring the surface to the required finish plane with no coarse aggregate visible. After surface moisture has disappeared the surfaces shall be finished with a wood-float to a smooth, even texture. Except for the bike path portion of the spillway, the floated surfaces shall be broomed with a stiff fiber-bristle brush in a direction perpendicular to flow in the canal for the spillway and transverse to that of the main traffic for driveways. The bike path portion shall be given a light-broom finish.

25.2.4 Paragraph 13, line 7. Delete "300 square feet" and insert: 200 square feet

26. SECTION 3C, PNEUMATICALLY PLACED CONCRETE

26.1 Page 3C-1, paragraph 2, line 1. Delete "used in Arizona Canal" and insert: used only in the Arizona Canal

26.2 Page 3C-2, paragraph 5.2

26.2.1 Line 1. Delete "6 1/2 sacks" and insert: 7 sacks

26.2.2 Line 2. Delete "30" and insert: 22

26.3 Page 3C-3. Delete paragraph 8.1

26.4.1 Paragraph 9.1, line 6 from top of the page. Delete "14 days" and insert: 48 hours

26.4.2 Paragraph 9.3, line 11. Delete "400" and insert: 200

27. DRAWINGS.

27.1 DRAWING FILE NO. 244/116 Rev. "A". On Inset Plan, after notation "Required Disposal Site" add: No. 1

Also delete notation "max. fill ht-3 ft."

27.2 DRAWING FILE NO. 244/117 Rev."A". On PLAN at south bank, west of abandoned telephone line, after notation "Required Disposal Site" add: No. 2

Also delete the notation "Max. fill ht.-5ft."

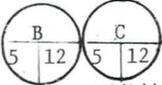
27.3 DRAWING FILE NO. 244/122. On Detail 

F
5 11

 at approximate sta. 1+50 of the Ramp Plan

indicate a section through the Spillway Access Ramp with arrows pointing northwesterly and add the designation 

D
11 12

27.4 DRAWING FILE NO. 244/123. On both Section  along the 3 ft. at the north of the spillway indicate the 3 ft. dimension lines and add the notation: 3ft. Bike Path.

27.5 DRAWING FILE NO. 244/127 Rev. "A". At end of General Note No. 3, after "changes" insert: the horizontal alignment, the invert width and the side slopes of the Arizona Canal may vary in accordance with the following: Also in notation 3.b. delete "vary  $\pm 1$  foot" and insert: vary  $\pm 2$  feet.

11. This amendment shall be attached to and shall become a part of the specifications.

Incl. Dwg. 244/113 Revision A

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

NOTICE: Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

  
Necessity  
Verified

Am. 4  
ARMY - C. of E. - Los Angeles

Bid Opening Date: 7 October 1980

U. S. ARMY ENGINEER DISTRICT, LOS ANGELES  
P. O. Box 2711  
Los Angeles, California 90053

25 September 1980

AMENDMENT NO. 3

I. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona" and the drawings are modified as follows:

10. BID FORM.

10.1 Delete page B-3 and insert the inclosed page B-3(Revised)

11. SPECIAL PROVISIONS.

11.1 Page S-1

11.1.1 Paragraph 1.1, line 4. Delete "31 January 1981" and insert: 31 January 1982.

11.1.2 Paragraph 1.2.1, lines 2 and 3. Delete "prior to start of spillway construction" and insert: not later than 28 February 1981.

11.1.3 Paragraph 1.2.2, line 2. Delete "30 Calendar days" and insert: 29 Calendar days

11.1.4 After paragraph 1.2.2 add:

1.2.2.1 In the event that the Contractor cannot complete the Arizona Canal Lining within the time limits specified hereinbefore:

a) The Contractor shall construct a cut off wall for sideslopes and invert in accordance with the details indicated;

b) The completed portion of Lining shall be continuous from Sta. 10+00 to the upstream limit of completed Lining;

c) The remaining portion of Lining shall be constructed during the next annual maintenance period;

d) The Contractor shall confirm the dates of the next annual maintenance period by contacting the Salt River Project, Mr D.R. (Bud) Lestikow, at 1521 Project Drive, Phoenix, Arizona 85008, Telephone (602) 273-5461.

1.2.3 Spillway Construction. The Contractor shall not begin construction of the spillway prior to completion of Interceptor Channel and Arizona Canal Construction.

12. SECTION 1A, GENERAL REQUIREMENTS.

12.1 Page 1A-5. After paragraph 10.6.1, add:

10.6.2 Construction Easement along Arizona Canal.

10.6.2.1 Emergency Access for Salt River Project. The Contractor shall provide access for emergency vehicles and personnel along the Arizona Canal right-of-way at all times throughout the length of the project.

10.6.2.2 Temporary Stockpiling of Materials. The Contractor will be permitted to stockpile unsuitable material, excess excavated material and excavated material suitable for fills within the Construction Easement. Stockpiled materials shall be

Am. 3

ARMY - C. of E. - Los Angeles

removed and the areas restored to existing conditions not later than 30 Calendar days after flow in the Arizona Canal is started.

10.6.2.3 The Constructor shall coordinate access and stockpile requirements with the Salt River Project, Mr Emmett Kelley at 1521 Project Drive, Phoenix, Arizona 85008, Telephone (602) 273-2592.

13. SECTION 1B, MEASUREMENT AND PAYMENT

13.1 Page 1B-1.

13.1.1 Paragraph 1, line 2. Delete "Water" and insert: Water, Interceptor Channel and Diversion and Control of Water, Arizona Canal

13.1.2 Paragraph 3.1.1, line 6. Delete "excavated way" and insert: excavated may

13.2 Page 1B-2

13.2.1 Paragraph 3.2

13.2.1.1 Line 1. Delete "3.2 Payment for Excavation Channel" and insert: 3.2.1 Payment for Excavation, Channel

13.2.1.2 Line 4. Delete "Arizona Canal,"

13.2.1.3 At the end of the paragraph add: Payment shall also include placement of material within required disposal sites.

13.2.2 After paragraph 3.2.4 add:

3.2.5 Payment for Excavation, canal will will be made at the applicable contract price, which payment shall constitute full compensation for excavation and disposal of excavated material for Arizona Canal, complete. This item includes excavation for invert, side slopes and cut-off walls and appurtenant work.

13.3 Page 1B-4. After paragraph 15 add:

16. WIRE MESH

16.1 Measurement. Measurement of wire mesh reinforcement in concrete side slopes, will be made of the area of welded wire fabric actually placed in the completed work in accordance with the drawings, approved schedules, or as directed. The measured lengths will be converted to square feet for the mesh. Steel in laps indicated on the drawings or required by the Contracting Officer will be measured. No measurement will be made for the additional steel in laps which are authorized for the convenience of the Contractor. No measurement will be made of steel supports and spacers shall be included in the various items with the reinforcement.

16.2 Payment for Wire Mesh reinforcement in the concrete side slopes will be made at the applicable contract price, which payment shall constitute full compensation for furnishing and placing the reinforcement, complete.

14. SECTION 2A, DIVERSION AND CONTROL OF WATER

14.1 Page 2A-1. Delete paragraph 1.2 and insert:

1.2 By-Pass Capacities.

1.2.1 General. The Contractor shall provide for diversion of stream flows hereinafter specified. The stream flows will include water originating upstream of the work, Water from side drains and channels adjacent to the work site, and will be in addition to any and all ground water originating within the work. Surface flows in excess of the following runoff quantities listed hereinafter will be regarded as floodflows.

1.2.2 Flows along the Interceptor Channel - 100 cfs.

1.2.3 Flows along the Arizona Canal - 5 cfs.

Am. 3

ARMY - C. of E. - Los Angeles

1.3 Drainage Ditches. The location and depth of any drainage ditch shall be subject to approval of the Contracting Officer. Special precaution shall be taken to avoid impairing the permanent subgrade and any excavation below the existing streambed or invert subgrade shall be refilled with compacted fill in accordance with the section; FILLS AND SUBGRADE PREPARATION by and at the expense of the Contractor.

15. DRAWINGS

15.1 DRAWING, FILE NO. 244/123.

15.1.1 Section  $\frac{B}{5|12}$  At the Arizona Canal side slope, delete "Excavation, Channel" and insert: Excavation, Canal

15.1.2 Section  $\frac{C}{5|12}$ . At the Arizona Canal lining, delete "comp. fill" and insert; Fill, Canal

15.1.3 Detail  $\frac{X}{12|12}$  In the Arizona Canal side slope, indicate 6x6-wl.4xwl.4 at the centerline of the side slope lining. Delete "0.33' " and insert: 4"

15.2 DRAWING, FILE NO. 244/125. Delete the SOUTHEAST RAMP entirely.

15.3 DRAWING, FILE NO. 244/126. SECTION  $\frac{A}{15|15}$  ; SECTION  $\frac{B}{15|15}$  ; SECTION THRU DOOR; and PROFILE OF WEIR, delete all references to 2" A.C. Pavement.

II. This amendment shall be attached to and shall become a part of the specifications.

Incls.

1. Page B-3 (Revised)
2. Dwgs. 244/116, 117, 118, 119, 121, 127 and 128  
All Revision A

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

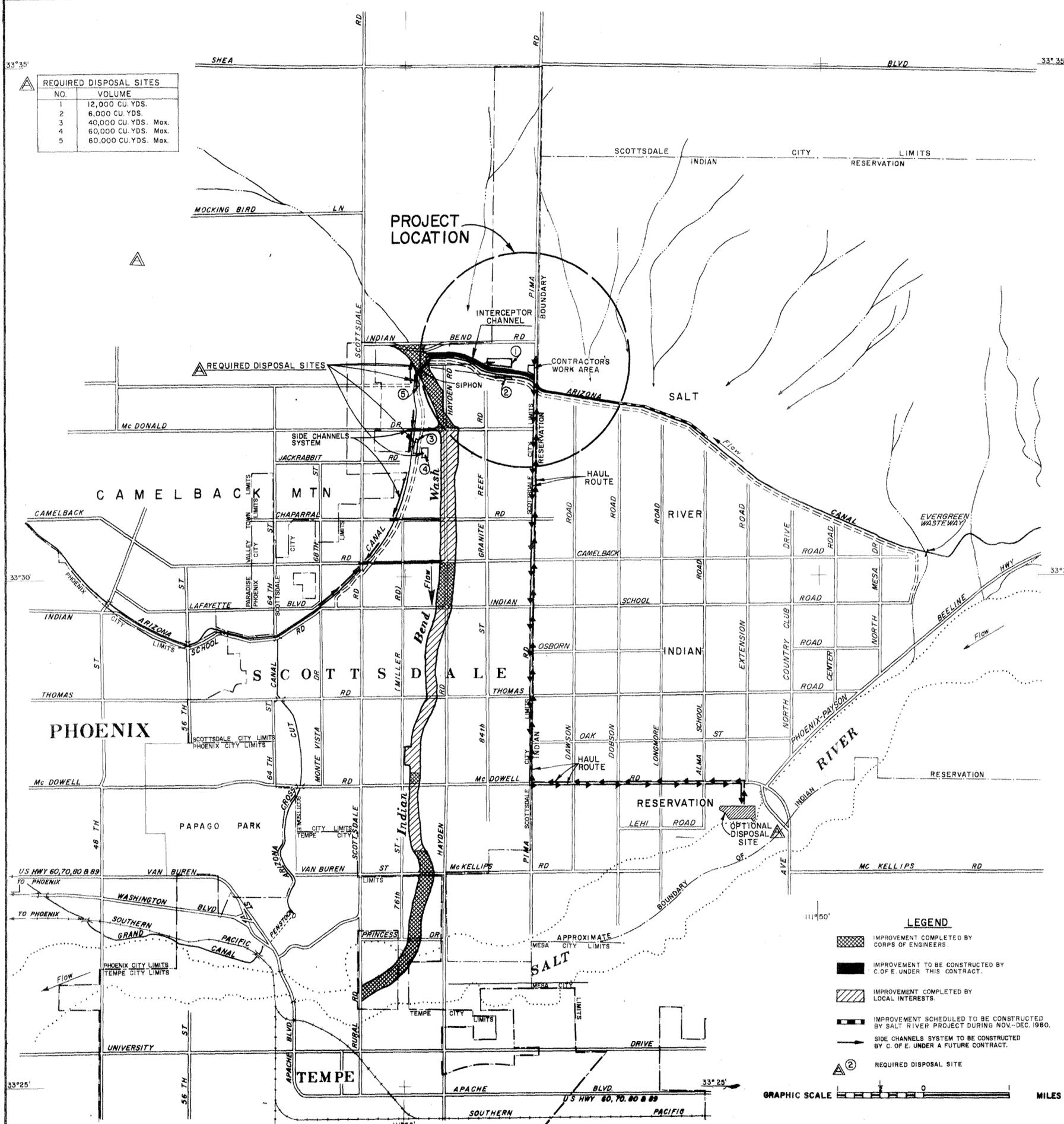
NOTICE: Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

*gfd*  
Necessity  
Verified

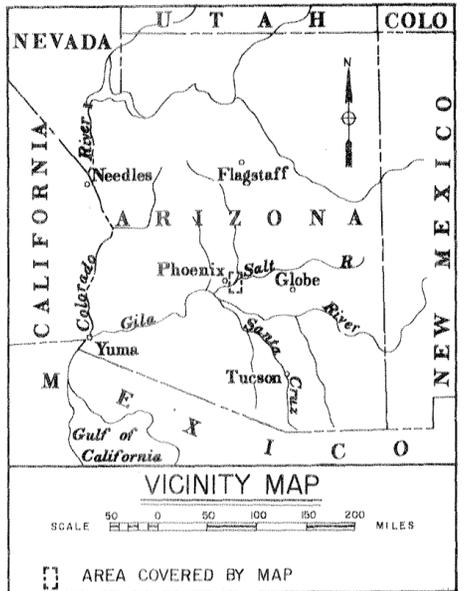
Am. 3  
ARMY - C. of E. - Los Angeles

BIDDING SCHEDULE

<u>Item No.</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
1.	DIVERSION AND CONTROL OF WATER, INTERCEPTOR CHANNEL	1	Job	L.S.	_____
1A	DIVERSION AND CONTROL OF WATER, ARIZONA CANAL	1	Job	L.S.	_____
2.	CLEARING SITE AND REMOVING OBSTRUCTIONS	1	Job	L.S.	_____
3.	EXCAVATION, CHANNEL	155,000	Cu.Yd.	_____	_____
3A	EXCAVATION, CANAL	26,600	Cu.Yd.	_____	_____
4.	FILL, CHANNEL	3,850	Cu.Yd.	_____	_____
4A	FILL, CANAL	3,750	Cu.Yd.	_____	_____
5.	FILL, LEVEE	2,800	Cu.Yd.	_____	_____
6.	FILL, TOE	2,200	Cu.Yd.	_____	_____
7.	FILL, TOPSOIL	20,800	Cu.Yd.	_____	_____
8.	CONCRETE, INVERT	8,950	Cu.Yd.	_____	_____
9.	CONCRETE SIDE SLOPES	3,150	Cu.Yd.	_____	_____
10.	CONCRETE, SPILLWAY	930	Cu.Yd.	_____	_____
11.	CONCRETE DRIVEWAY	3	Each	_____	_____
11A	WIRE MESH	203,400	Sq.Ft.	_____	_____
12.	STONE PROTECTION	7,900	Ton	_____	_____
13.	GROUTING STONE PROTECTION	1,560	Cu.Yd.	_____	_____
14.	ASPHALT CONCRETE PAVING	1,100	Ton	_____	_____
15.	PIPE GATE	5	Each	_____	_____
16.	STATION MARKING	1	Job	L.S.	_____
17.	GAGING STATION	1	Job	L.S.	_____
18.	CONCRETE PROTECTION 8-INCH SEWERLINE	1	Job	L.S.	_____
19.	ADJUST MANHOLE TO GRADE	1	Job	L.S.	_____
TOTAL AMOUNT					\$ _____



REQUIRED DISPOSAL SITES	
NO.	VOLUME
1	12,000 CU. YDS.
2	6,000 CU. YDS.
3	40,000 CU. YDS. Max.
4	60,000 CU. YDS. Max.
5	60,000 CU. YDS. Max.



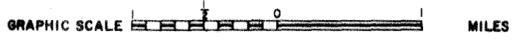
SECTION IDENTIFICATION NUMBER  
 NUMBER OF SHEET ON WHICH SECTION IS DRAWN  
 NUMBER OF SHEET ON WHICH SECTION IS TAKEN  
 SYMBOL WHERE SECTION IS TAKEN

SECTION  $\frac{3}{413}$   
 SUBTITLE FOR SECTION DRAWING

DETAIL IDENTIFICATION NUMBER  
 NUMBER OF SHEET ON WHICH CONDITION IS SHOWN  
 NUMBER OF SHEET ON WHICH DETAIL OF THE CONDITION IS DRAWN  
 SYMBOL FOR LOCATING CONDITION FOR WHICH THERE IS A DETAIL

DETAIL  $\frac{75}{618}$   
 SUBTITLE FOR DETAIL DRAWING

- LEGEND**
- IMPROVEMENT COMPLETED BY CORPS OF ENGINEERS.
  - IMPROVEMENT TO BE CONSTRUCTED BY C. OF E. UNDER THIS CONTRACT.
  - IMPROVEMENT COMPLETED BY LOCAL INTERESTS.
  - IMPROVEMENT SCHEDULED TO BE CONSTRUCTED BY SALT RIVER PROJECT DURING NOV.-DEC. 1980.
  - SIDE CHANNELS SYSTEM TO BE CONSTRUCTED BY C. OF E. UNDER A FUTURE CONTRACT.
  - REQUIRED DISPOSAL SITE



DESIGNED BY: <i>M. Rabitich</i>	U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS	
DRAWN BY: <b>D.R.V.</b>	GILA RIVER BASIN, ARIZONA	
CHECKED BY: <b>A</b>	INDIAN BEND WASH INTERCEPTOR CHANNEL PROJECT LOCATION	
SUBMITTED BY:	DATE APPROVED:	SPEC. NO. DACW09-80-B-0947
<i>M. Rabitich</i>	Aug. '80	DISTRICT FILE NO. 244/113 REVA
CHIEF DESIGN BRANCH	Ass. '80	SHEET 2 OF 18 SHEETS

Reference: DACW09-80-B-0047-0001

Bid Opening Date: 25 September 1980

U.S. ARMY ENGINEER DISTRICT, LOS ANGELES  
P. O. Box 2711  
Los Angeles, California 90053

8 September 1980

AMENDMENT NO. 1

I. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona" are modified as follows:

1. SECTION 2C, EXCAVATION

1.1 Page 2C-2, paragraph 5.1, line 7. Delete "conduts" and insert: conduits

2. SECTION 2E, FILLS AND SUBGRADE PREPARATION

2.1 Page 2E-3, paragraph 5.3, line 2. Delete "draiwng" and insert: drawing

2.2 Page 2E-4, paragraph 7.3, line 8. Delete "95 percent" and insert: 93 percent

3. SECTION 2H, PRIME COAT AND WEED KILLER

3.1 Page 2H-2.

3.1.1 Paragraph 6.1, line 2. After "approval" insert: of the Contracting Officer

3.1.2 Paragraph 7, line 1. Delete "(weed killer and)" and insert: weed killer and

3.1.3 Paragraph 8.

3.1.3.1 Line 7. Delete "solutiolo" and insert: solution

3.1.3.2 Line 9. Delete "mechanicaly" and insert: mechanically

3.1.3.3 Line 10. Delete "process" and insert: progress

4. SECTION 2I, ASPHALT CONCRETE

4.1 Page 2I-4

4.1.1 Paragraph 12, line 1. Delete "steel-wheel and pneumatic tired" and insert: steel-wheeled

5. SECTION 2J, STONE PROTECTION

5.1 Page 2J-2, Note: (1), line 15. Delete "fracturs" and insert: fractures

5.2 Page 2J-3

5.2.1 NOTE 2: lines 1 and 2. Delete "+20 grams" and insert:  $\pm$  20 grams

5.2.2 Paragraph 2.5.2. After line 2 delete the table and insert:

Weight of Individual Pieces	Percent Smaller(by Weight)
160	100
70	60-100
35	15-50
10	0-15

Am. 1  
ARMY - C. of E. - Los Angeles

6. SECTION 3A, CONCRETE

6.1 Page 3A-2, paragraph 6, line 1. Delete "confoming" and insert: conforming

7. SECTION 3B, GROUTING STONE PROTECTION

7.1 Page 3B-1. Delete paragraph 2.1 and insert:

2.1 Aggregate

2.1.1 General. Aggregate as delivered to the mixers, shall consist of clean, hard, uncoated particles, and shall conform to ASTM C 33. The Contractor shall designate in writing within 15 days after date of notice to proceed the source or sources from which he proposes to furnish the aggregate and submit certification from an approved testing laboratory that aggregates to be furnished meet the requirements of these specifications.

2.1.2 Gradation. The aggregate shall conform to the specific requirements in ASTM C 33 for Fine Aggregate.

II. This amendment shall be attached to and shall become a part of the specifications.

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

NOTICE:

Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

*ged*  
Necessity  
Verified

RECEIVED

SP 22 '80

CH ENG		HYDRO
ASST		ENGR
		ENGR
	3	CA 7.1

Reference: DACW09-80-B-0047-0002

Bid Opening Date: 7 October 1980

U. S. ARMY ENGINEER DISTRICT, LOS ANGELES  
P. O. Box 2711  
Los Angeles, California 90053

18 September 1980

AMENDMENT NO. 2

1. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona," are modified as follows:

8. INVITATION FOR BIDS

8.1 Page I-1. Delete the Bid opening date "25 September 1980" and insert: 7 October 1980.

8.2 Page I-4, paragraph 16. Delete line 2 and insert: Mr. Edgar Dunnigan, Project Office, Indian Bend Wash, Telephone (602) 946-3426.

9. SPECIAL PROVISIONS

9.1 Page S-1, paragraph 1.1, line 2. Delete "2 October" and insert: 14 October

11. This amendment shall be attached to and shall become a part of the specifications.

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

NOTICE: Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

*ged*  
Necessity  
Verified

Bid Opening Date: 7 October 1980

U. S. ARMY ENGINEER DISTRICT, LOS ANGELES  
P. O. Box 2711  
Los Angeles, California 90053

25 September 1980

AMENDMENT NO. 3

I. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona" and the drawings are modified as follows:

10. BID FORM.

10.1 Delete page B-3 and insert the inclosed page B-3(Revised)

11. SPECIAL PROVISIONS.

11.1 Page S-1

11.1.1 Paragraph 1.1, line 4. Delete "31 January 1981" and insert: 31 January 1982.

11.1.2 Paragraph 1.2.1, lines 2 and 3. Delete "prior to start of spillway construction" and insert: not later than 28 February 1981.

11.1.3 Paragraph 1.2.2, line 2. Delete "30 Calendar days" and insert: 29 Calendar days

11.1.4 After paragraph 1.2.2 add:

1.2.2.1 In the event that the Contractor cannot complete the Arizona Canal Lining within the time limits specified hereinbefore:

a) The Contractor shall construct a cut off wall for sideslopes and invert in accordance with the details indicated;

b) The completed portion of Lining shall be continuous from Sta. 10+00 to the upstream limit of completed Lining;

c) The remaining portion of Lining shall be constructed during the next annual maintenance period;

d) The Contractor shall confirm the dates of the next annual maintenance period by contacting the Salt River Project, Mr D.R. (Bud) Lestikow, at 1521 Project Drive, Phoenix, Arizona 85008, Telephone (602) 273-5461.

1.2.3 Spillway Construction. The Contractor shall not begin construction of the spillway prior to completion of Interceptor Channel and Arizona Canal Construction.

12. SECTION 1A, GENERAL REQUIREMENTS.

12.1 Page 1A-5. After paragraph 10.6.1, add:

10.6.2 Construction Easement along Arizona Canal.

10.6.2.1 Emergency Access for Salt River Project. The Contractor shall provide access for emergency vehicles and personnel along the Arizona Canal right-of-way at all times throughout the length of the project.

10.6.2.2 Temporary Stockpiling of Materials. The Contractor will be permitted to stockpile unsuitable material, excess excavated material and excavated material suitable for fills within the Construction Easement. Stockpiled materials shall be

Am. 3

ARMY - C. of E. - Los Angeles

removed and the areas restored to existing conditions not later than 30 Calendar days after flow in the Arizona Canal is started.

10.6.2.3 The Contractor shall coordinate access and stockpile requirements with the Salt River Project, Mr Emmett Kelley at 1521 Project Drive, Phoenix, Arizona 85008, telephone (602) 273-2592.

13. SECTION 1B, MEASUREMENT AND PAYMENT

13.1 Page 1B-1.

13.1.1 Paragraph 1, line 2. Delete "Water" and insert: Water, Interceptor Channel and Diversion and Control of Water, Arizona Canal

13.1.2 Paragraph 3.1.1, line 6. Delete "excavated way" and insert: excavated may

13.2 Page 1B-2

13.2.1 Paragraph 3.2

13.2.1.1 Line 1. Delete "3.2 Payment for Excavation Channel" and insert: 3.2.1 Payment for Excavation, Channel

13.2.1.2 Line 4. Delete "Arizona Canal,"

13.2.1.3 At the end of the paragraph add: Payment shall also include placement of material within required disposal sites.

13.2.2 After paragraph 3.2.4 add:

3.2.5 Payment for Excavation, canal will will be made at the applicable contract price, which payment shall constitute full compensation for excavation and disposal of excavated material for Arizona Canal, complete. This item includes excavation for invert, side slopes and cut-off walls and appurtenant work.

13.3 Page 1B-4. After paragraph 15 add:

16. WIRE MESH

16.1 Measurement. Measurement of wire mesh reinforcement in concrete side slopes, will be made of the area of welded wire fabric actually placed in the completed work in accordance with the drawings, approved schedules, or as directed. The measured lengths will be converted to square feet for the mesh. Steel in laps indicated on the drawings or required by the Contracting Officer will be measured. No measurement will be made for the additional steel in laps which are authorized for the convenience of the Contractor. No measurement will be made of steel supports and spacers shall be included in the various items with the reinforcement.

16.2 Payment for Wire Mesh reinforcement in the concrete side slopes will be made at the applicable contract price, which payment shall constitute full compensation for furnishing and placing the reinforcement, complete.

14. SECTION 2A, DIVERSION AND CONTROL OF WATER

14.1 Page 2A-1. Delete paragraph 1.2 and insert:

1.2 By-Pass Capacities.

1.2.1 General. The Contractor shall provide for diversion of stream flows hereinafter specified. The stream flows will include water originating upstream of the work, Water from side drains and channels adjacent to the work site, and will be in addition to any and all ground water originating within the work. Surface flows in excess of the following runoff quantities listed hereinafter will be regarded as floodflows.

1.2.2 Flows along the Interceptor Channel - 100 cfs.

1.2.3 Flows along the Arizona Canal - 5 cfs.

Am. 3

ARMY - C. of E. - Los Angeles

1.3 Drainage Ditches. The location and depth of any drainage ditch shall be subject to approval of the Contracting Officer. Special precaution shall be taken to avoid impairing the permanent subgrade and any excavation below the existing streambed or invert subgrade shall be refilled with compacted fill in accordance with the section; FILLS AND SUBGRADE PREPARATION by and at the expense of the Contractor.

15. DRAWINGS

15.1 DRAWING, FILE NO. 244/123.

15.1.1 Section 

B
5   12

 At the Arizona Canal side slope, delete "Excavation, Channel" and insert: Excavation, Canal

15.1.2 Section 

C
5   12

 . At the Arizona Canal lining, delete "comp. fill" and insert; Fill, Canal

15.1.3 Detail 

X
12   12

 In the Arizona Canal side slope, indicate 6x6-wl.4xwl.4 at the centerline of the side slope lining. Delete "0.33' " and insert: 4"

15.2 DRAWING, FILE NO. 244/125. Delete the SOUTHEAST RAMP entirely.

15.3 DRAWING, FILE NO. 244/126. SECTION 

A
15   15

 ; SECTION 

B
15   15

 ; SECTION THRU DOOR; and PROFILE OF WEIR, delete all references to 2" A.C. Pavement.

II. This amendment shall be attached to and shall become a part of the specifications.

Incls.

1. Page B-3 (Revised)
2. Dwgs. 244/116, 117, 118, 119, 121, 127 and 128  
All Revision A

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

NOTICE: Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

*ged*  
Necessity  
Verified

Am. 3  
ARMY - C. of E. - Los Angeles

BIDDING SCHEDULE

<u>Item No.</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
1.	DIVERSION AND CONTROL OF WATER, INTERCEPTOR CHANNEL	1	Job	L.S.	_____
1A	DIVERSION AND CONTROL OF WATER, ARIZONA CANAL	1	Job	L.S.	_____
2.	CLEARING SITE AND REMOVING OBSTRUCTIONS	1	Job	L.S.	_____
3.	EXCAVATION, CHANNEL	155,000	Cu.Yd.	_____	_____
3A	EXCAVATION, CANAL	26,600	Cu.Yd.	_____	_____
4.	FILL, CHANNEL	3,850	Cu.Yd.	_____	_____
4A	FILL, CANAL	3,750	Cu.Yd.	_____	_____
5.	FILL, LEVEE	2,800	Cu.Yd.	_____	_____
6.	FILL, TOE	2,200	Cu.Yd.	_____	_____
7.	FILL, TOPSOIL	20,800	Cu.Yd.	_____	_____
8.	CONCRETE, INVERT	8,950	Cu.Yd.	_____	_____
9.	CONCRETE SIDE SLOPES	3,150	Cu.Yd.	_____	_____
10.	CONCRETE, SPILLWAY	930	Cu.Yd.	_____	_____
11.	CONCRETE DRIVEWAY	3	Each	_____	_____
11A	WIRE MESH	203,400	Sq.Ft.	_____	_____
12.	STONE PROTECTION	7,900	Ton	_____	_____
13.	GROUTING STONE PROTECTION	1,560	Cu.Yd.	_____	_____
14.	ASPHALT CONCRETE PAVING	1,100	Ton	_____	_____
15.	PIPE GATE	5	Each	_____	_____
16.	STATION MARKING	1	Job	L.S.	_____
17.	GAGING STATION	1	Job	L.S.	_____
18.	CONCRETE PROTECTION 8-INCH SEWERLINE	1	Job	L.S.	_____
19.	ADJUST MANHOLE TO GRADE	1	Job	L.S.	_____
TOTAL AMOUNT					\$ _____

FLOOD CONTROL DISTRICT  
RECEIVED

OCT 6 '80

	CH ENG		HYDRO
	ASST		LMgt
	ADMIN		SUSP
	G & O	3	FILE
1	<i>FILE</i>		DESTROY
2	<i>EOK</i>		
REMARKS			

Reference: DACW09-80-B-0047-0004

Bid Opening Date: 9 October 1980

U. S. ARMY ENGINEER DISTRICT  
P. O. Box 2711  
Los Angeles, California 90053

1 October 1980

AMENDMENT NO. 4

1. Specifications, Reference No. DACW09-80-B-0047, covering "Indian Bend Wash Interceptor Channel at Maricopa County, Arizona" and Amendment No. 3, dated 25 September 1980, and the drawings are modified as follows:

16. INVITATION FOR BIDS

16.1 Page 1-1. Delete the Bid opening date "7 October 1980" and insert: 9 October 1980

17. AMENDMENT NO. 3

17.1 Page 1.

17.1.1 Modification No. 11.1.1. Delete "Paragraph 1.1" and insert: Paragraph 1.

17.1.2 Modification No. 11.1.4, line 5. Delete "cut off wall for" and insert: cut off wall at the upstream end of completed lining for

17.1.3 Modification No. 12.1, line 8. Delete "Stockpiled Materials shall be" and insert: Materials stockpiled therein shall be placed between the access road and construction easement line. All material stockpiled as specified herein shall be

18. SPECIAL PROVISIONS

18.1 Page S-1.

18.1.1 Paragraph 1.1, line 2. Delete "14 October 1980" and insert: 16 October 1980.

18.1.2 Paragraph 1.2.2, line 1. Delete "The Contractor" and insert: Except as specified hereinafter, the Contractor.

18.1.3 After paragraph 1.2.3 add:

1.2.4 Required Disposal Areas. The Contractor shall complete work within the disposal areas indicated as scheduled hereafter:

Description	Completion Date
Disposal Area No. 1	Within 30 calendar days after notice to proceed
Disposal Area No. 2	Prior to 28 February 1981
Disposal Area No. 3	Prior to 30 November 1980
Disposal Area No. 4	Prior to 1 January 1981
Disposal Area No. 5	Prior to 1 January 1981

18.1.4 Paragraph 2, line 5. Delete "the sums of \* \* \* day of delay." and insert: the following sums separately for each day of delay:

Am. 4  
ARMY - C. of E. - Los Angeles

18.1.5 After paragraph 2, add:

2.1 Construction of Interceptor Channel as specified in subparagraph 1.2.1; \$170.00

2.2 Construction of Required Disposal Areas as specified in subparagraph 1.2.4; \$170.00

2.3 Construction of remaining work including cleanup; \$170.00

18.2 Page S-2, paragraph 3.1, Insert: "Revision A" after the following District File Nos; 244/113, 244/116, 244/117, 244/118, 244/119, 244/121, 244/127, and 244/128.

19. SECTION 1A, GENERAL REQUIREMENTS

19.1 Page 1A-5. After paragraph 10.6.2.3 add:

10.6.3 Excavation within the Interceptor Channel is presently being accomplished by others. Excavation by others will be completed not later than 12:00 midnight on 18 October 1980 and the drawings and specifications reflect the projected conditions as of that date.

10.6.4 Topsoil Fill Stockpile Areas. Fill material suitable for topsoil fill has been stockpiled in the areas indicated. Topsoil material shall be removed from the stockpile area and used in the work. Material from the stockpile area within the Contractors Work Area may be placed in other stockpile areas prior to completion of placement of topsoil fill. After removal of materials from stockpile areas, the sites shall be restored to a condition satisfactory to the Contracting Officer and the areas shall be graded to drain.

20. SECTION 1B, MEASUREMENT AND PAYMENT

20.1 Page 1B-1.

20.1.1 Index. After listing of paragraph 14, insert: 15. Wire Mesh

20.1.2 Paragraph 2.1

20.1.2.1 Line 2. Delete "within the channel" and insert: within the canal and channel

20.1.2.2 Line 6. Delete "utility lines; removal" and insert: utility lines; removal of existing concrete side slope lining.

20.2 Page 1B-2. At end of paragraph 4.2.1 add: Where fill material, such as topsoil, is obtained from existing stockpiles, this payment shall also include loading and hauling.

20.3 Page 1B-4.

20.3.1 Delete "15. ADJUST MANHOLE TO GRADE" and insert: 14. ADJUST MANHOLE TO GRADE.

20.3.2 Delete "16. WIRE MESH" and insert: 15. WIRE MESH

20.3.3 Delete "16.1 Measurement" and insert: 15.1 Measurement.

20.3.4 Delete "16.2 Payment" and insert: 15.2 Payment

21. SECTION 2B, CLEARING SITE AND REMOVING OBSTRUCTIONS

21.1 Page 2B-2

21.1.1 Delete paragraph 4.1 and 4.2 and insert:

4.1 General. The Required Disposal Areas shall be used as herein after specified. The Salt River Landfill Disposal Site may be used at the option of the Contractor for materials as specified hereinafter.

Am. 4  
ARMY - C. of E. - Los Angeles

4.2 Required Disposal Areas. The Required Disposal Areas are indicated on the drawings. Material shall consist of excavated material suitable for required fills. Requirements for use of these areas is specified in section: EXCAVATION.

22. SECTION 2C, EXCAVATION.

22.1 Page 2C-1, paragraph 5, line 7. Delete "trench be made" and insert: trench shall be made.

22.2 Page 2C-2. Delete paragraph 7 and insert:

7. DISPOSAL OF EXCAVATED MATERIALS. Excavated materials suitable for required fills shall be placed in temporary stock piles or used directly in the work. Excess materials suitable for fills shall be placed in the required disposal sites. Material in excess of the quantities to be placed in required fill areas will become the property of the Contractor and removed from the site. Excavated material not suitable for fills and unsatisfactory materials shall be disposed of in the Salt River landfill Disposal Site as specified in section: CLEARING SITE AND REMOVING OBSTRUCTIONS. No excavated materials or waste of any kind shall be disposed of at any place beyond the limits of the work under this contract without express authority. Prior to placing material, disposal and stockpile areas shall be cleared of trash and vegetation. Vegetation shall be cut off at the existing ground line. Clearing shall conform to the applicable requirements of the section: CLEARING SITE AND REMOVING OBSTRUCTIONS. Stockpile and disposal fills shall be placed in a manner to preclude ponding of water.

7.1 Required Disposal Sites. Placement of excess excavated materials in required disposal sites shall be in accordance with the following priorities and quantities:

<u>Site No.</u>	<u>Priority of Placement</u>	<u>Required Quantity</u>
1	1	12,000 cy
2	2	6,000 cy
3	3	40,000 cy maximum
4	4	60,000 cy maximum
5	5	60,000 cy maximum

Excess excavated material shall be placed to a maximum height of 6 feet in the required disposal sites. Placement of material shall be from north to south in Site No. 3 and from south to north in Site No. 4. There are no restrictions on the placement in the other disposal sites. Compaction other than that obtained by the controlled movement of construction equipment will not be required. The Contractor shall complete disposal operations in Site No. 1 before placing any material in other disposal sites. The Contractor shall then complete disposal operations in other sites as determined by the priority number specified herein.

23. SECTION 2E, FILLS AND SUBGRADE PREPARATION.

23.1 Page 2E-3

23.1.1 Delete paragraph 4. and insert: 4. COMPACTED Fill, CANAL AND CHANNEL.

23.1.2 Delete paragraph 4.1 and insert: 4.1 Invert and Side Slopes.

23.1.3 Paragraph 4.1.2, line 2. Delete "95 percent" and insert: 90 percent

23.1.4 Paragraph 5.1, lines 2 and 3. Delete "invert in the paragraph: COMPACTED FILL, CHANNEL" and insert: side slopes and invert in the paragraph: COMPACTED FILL, CANAL AND CHANNEL.

Am. 4  
ARMY - C. of E. - Los Angeles

23.2 Page 2E-4

23.2.1 Paragraph 6.1.4. Delete "95 percent" and insert: 90 percent.

23.2.2 Delete paragraph 7.1 and insert:

7.1 Subgrade for Topsoil Material. After the channel has been excavated to rough grade, the entire subgrade shall be trimmed to a uniform grade and smoothed to make the subgrade ready to receive topsoil within the Interceptor Channel. If the subgrade is disturbed by the Contractor's operations or is over excavated, the subgrade shall be restored to grade and compacted to a density of 90 percent of maximum density. The finished surface of the subgrade shall not be more than  $\frac{1}{2}$  inch from the indicated grade at any point when tested with a 10-foot straightedge.

23.3 Page 2E-5. After paragraph 7.3 add:

7.4 Subgrade for Arizona Canal Invert and Side Slopes. The native foundation materials will adequately support the channel invert provided the materials are not made spongy, weavy, rutty, or otherwise unstable by the action of the construction equipment. In some locations the foundation materials are fine grained, have high moisture contents, and are highly susceptible to loss of stability under the action of construction equipment. Where unstable conditions are created, the Contractor shall treat the foundation to provide a stable subgrade for operation of construction equipment and for subsequent placement of concrete. The treatment shall consist of aeration of the native materials, or moisture reduction by other approved methods, or shall consist of removal and replacement with satisfactory materials from other sources. The depth and extent of required treatment will depend on the tire pressure, wheel loading; and frequency and repetition of loading by the construction equipment. Any material that is disturbed in place, or any materials used to replace unstable material shall be compacted to a density of at least 90% of maximum density. Prior to placement of concrete the entire invert subgrade for the canal shall be trimmed to a uniform grade and smoothed. The finished surface of the subgrade shall not be more than  $\frac{1}{2}$  inch from the indicated grade at any point when tested with a 10-foot straightedge.

8. TOPSOIL FILL. Topsoil Fill material has been stockpiled on the site in the areas indicated. This material shall be used for topsoil fill for the invert and side slopes of the interceptor channel. Topsoil material shall be free from sod, roots, brush, debris, trash or other objectionable material, and shall contain no stone larger than 3 inches. Each layer of fill shall be compacted to not less than 85 percent of maximum density. Excess topsoil material shall be removed and disposed as specified in section: CLEARING SITE AND REMOVING OBSTRUCTIONS. In the event additional topsoil material is necessary, it shall be obtained from sources approved by the Contracting Officer.

24. SECTION 2J, STONE PROTECTION.

24.1 Page 2J-1, paragraph 2.1, line 4. Delete 45 days and insert: 15 days

25. SECTION 3A, CONCRETE

25.1 Page 3A-2, paragraph 4.3

25.1.1 Line 1. Delete "Curing materials" and insert: Except for the Arizona Canal lining, curing materials

25.1.2 At end of paragraph 4.3 add: curing material for the Arizona Canal lining shall be white pigmented membrane-forming curing compound.

25.1.3 Page 3A-2, paragraph 5.3. Delete "slump shall be 2 to" and insert: slump shall not exceed

25.2 Page 3A-3

25.2.1 Paragraph 9.1. Delete "unless otherwise indicated \* \* \* 10 feet on center."

Am. 4

ARMY - C. of E. - Los Angeles

25.2.2 Delete paragraph 9.2

25.2.3 Delete paragraphs 12 and 12.1 and insert:

12. CONCRETE FINISHES.

12.1 Recorder House Floor and Roof Slabs. Finished floor and roof slabs shall be true plain surfaces with no deviations in excess of 1/8 inch when tested with a 10-foot straightedge. Surfaces shall be screeded and floated to the required finish level with no coarse aggregate visible before finishing as specified below.

12.1.1 Monolithic Finish shall be given to recorder house floor and roof slabs. After the surface moisture has disappeared, floated-surfaces shall be steel trowled to a smooth, even, dense finish free from blemishes including trowel marks. Roof surfaces shall be lightly steel-troweled and left free of ridges and other projections.

12.2 Arizona Canal Invert. Finish other than that which is produced by the normal placing and finishing equipment will not be required. Finished invert surface shall be left free of ridges and other projections. The contractor shall not operate equipment on the finished invert until at least 60 hours after placement.

12.3 Spillway and Driveways. Exposed surfaces of the spillway and driveways shall be screeded with straightedges to bring the surface to the required finish plane with no coarse aggregate visible. After surface moisture has disappeared the surfaces shall be finished with a wood-float to a smooth, even texture. Except for the bike path portion of the spillway, the floated surfaces shall be broomed with a stiff fiber-bristle brush in a direction perpendicular to flow in the canal for the spillway and transverse to that of the main traffic for driveways. The bike path portion shall be given a light-broom finish.

25.2.4 Paragraph 13, line 7. Delete "300 square feet" and insert: 200 square feet

26. SECTION 3C, PNEUMATICALLY PLACED CONCRETE

26.1 Page 3C-1, paragraph 2, line 1. Delete "used in Arizona Canal" and insert: used only in the Arizona Canal

26.2 Page 3C-2, paragraph 5.2

26.2.1 Line 1. Delete "6 1/2 sacks" and insert: 7 sacks

26.2.2 Line 2. Delete "30" and insert: 22

26.3 Page 3C-3. Delete paragraph 8.1

26.4.1 Paragraph 9.1, line 6 from top of the page. Delete "14 days" and insert: 48 hours

26.4.2 Paragraph 9.3, line 11. Delete "400" and insert: 200

27. DRAWINGS.

27.1 DRAWING FILE NO. 244/116 Rev. "A". On Inset Plan, after notation "Required Disposal Site" add: No. 1

Also delete notation "max. fill ht-3 ft."

27.2 DRAWING FILE NO. 244/117 Rev."A". On PLAN at south bank, west of abandoned telephone line, after notation "Required Disposal Site" add: No. 2

Also delete the notation "Max. fill ht.-5ft."

27.3 DRAWING FILE NO. 244/122. On Detail 

D	F
5	11

 at approximate sta. 1+50 of the Ramp Plan

indicate a section through the Spillway Access Ramp with arrows pointing northwesterly and add the designation 

D
11   12

27.4 DRAWING FILE NO. 244/123. On both Section 

B	
5	12

C	
5	12

 along the 3 ft. at the north of the spillway indicate the 3 ft. dimension lines and add the notation: 3ft. Bike Path.

27.5 DRAWING FILE NO. 244/127 Rev."A". At end of General Note No. 3, after "changes" insert: the horizontal alinement, the invert width and the side slopes of the Arizona Canal may vary in accordance with the following: Also in notation 3.b. delete "vary  $\pm 1$  foot" and insert: vary  $\pm 2$  feet.

11. This amendment shall be attached to and shall become a part of the specifications.

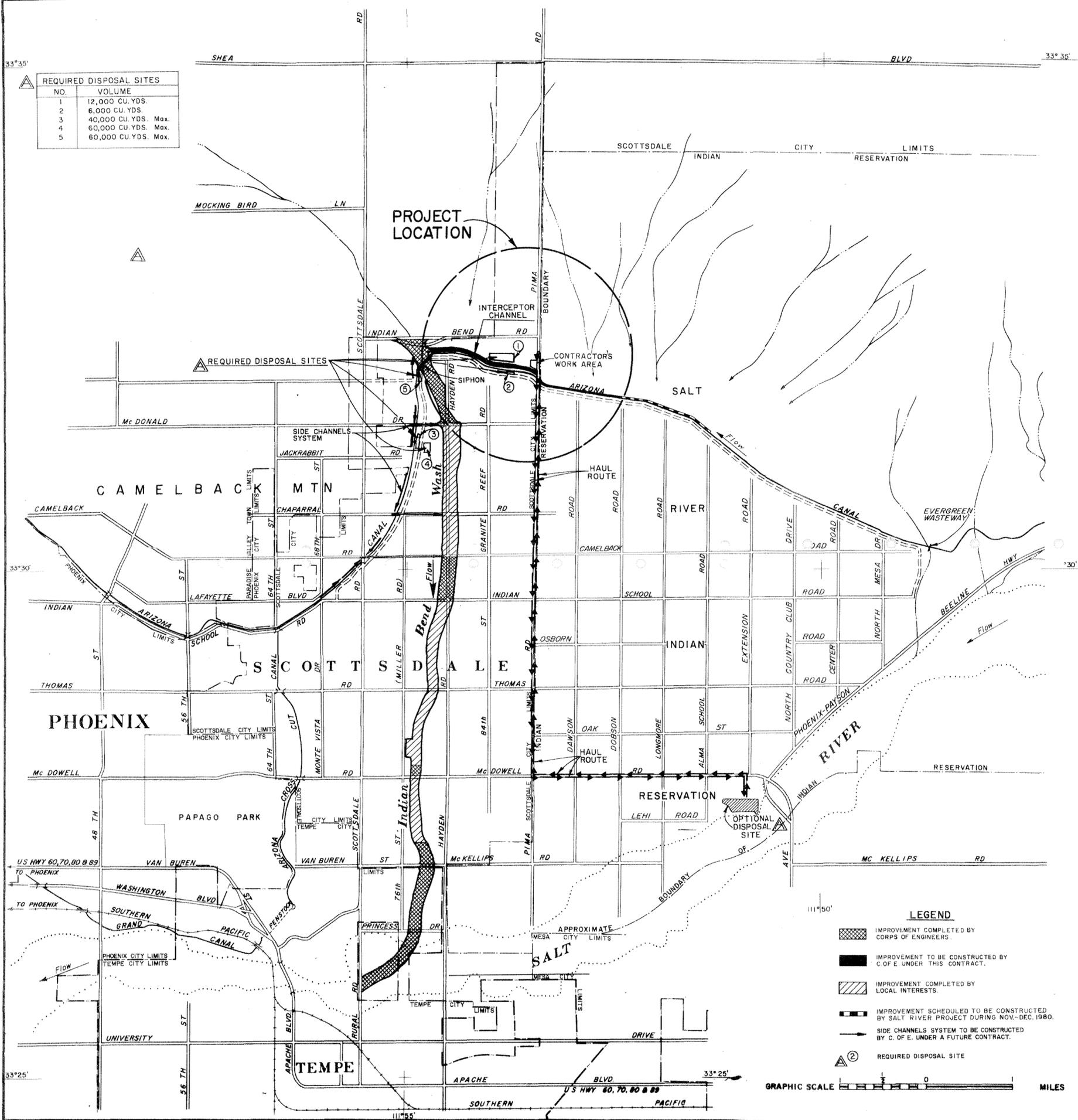
Incl. Dwg. 244/113 Revision A

GWYNN A. TEAGUE  
Colonel, CE  
District Engineer

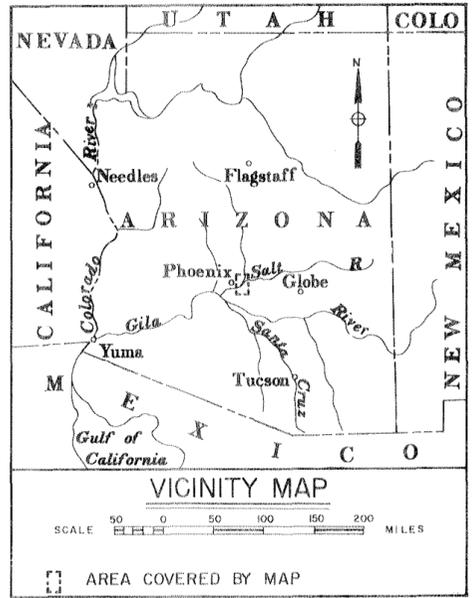
NOTICE: Bidders are required to acknowledge receipt of this amendment on the Bid Form, in the space provided, or by separate letter or telegram prior to opening of bids. Failure to acknowledge all amendments may cause rejection of the bid.

  
Necessity  
Verified

Am. 4  
ARMY - C. of E. - Los Angeles



REQUIRED DISPOSAL SITES	
NO.	VOLUME
1	12,000 CU. YDS.
2	6,000 CU. YDS.
3	40,000 CU. YDS. Max.
4	60,000 CU. YDS. Max.
5	60,000 CU. YDS. Max.



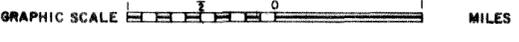
SECTION IDENTIFICATION NUMBER  
 NUMBER OF SHEET ON WHICH SECTION IS DRAWN  
 NUMBER OF SHEET ON WHICH SECTION IS TAKEN  
 SYMBOL WHERE SECTION IS TAKEN

SECTION 413  
 SUBTITLE FOR SECTION DRAWING

DETAIL IDENTIFICATION NUMBER  
 NUMBER OF SHEET ON WHICH CONDITION IS SHOWN  
 NUMBER OF SHEET ON WHICH DETAIL OF THE CONDITION IS DRAWN  
 SYMBOL FOR LOCATING CONDITION FOR WHICH THERE IS A DETAIL

DETAIL 75/618  
 SUBTITLE FOR DETAIL DRAWING

- LEGEND**
- IMPROVEMENT COMPLETED BY CORPS OF ENGINEERS.
  - IMPROVEMENT TO BE CONSTRUCTED BY C. OF E. UNDER THIS CONTRACT.
  - IMPROVEMENT COMPLETED BY LOCAL INTERESTS.
  - IMPROVEMENT SCHEDULED TO BE CONSTRUCTED BY SALT RIVER PROJECT DURING NOV.-DEC. 1980.
  - SIDE CHANNELS SYSTEM TO BE CONSTRUCTED BY C. OF E. UNDER A FUTURE CONTRACT.
  - REQUIRED DISPOSAL SITE



DESIGNED BY <i>[Signature]</i>	U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS
DRAWN BY <b>D.R.V.</b>	GILA RIVER BASIN, ARIZONA <b>INDIAN BEND WASH INTERCEPTOR CHANNEL PROJECT LOCATION</b>
CHECKED BY <i>[Signature]</i>	
SUBMITTED BY	DATE APPROVED: _____
DATE APPROVED: _____	SPEC. NO. DACW09-80-B-0947
DATE APPROVED: _____	DISTRICT FILE NO. 244/113 REVA
DATE APPROVED: _____	SHEET 2 OF 18 SHEETS

DACW09-80-B-0047

**INVITATION FOR BIDS**  
**(CONSTRUCTION CONTRACT)**

DATE  
80 AUG 26

**NAME AND LOCATION OF PROJECT**

INDIAN BEND WASH,  
INTERCEPTOR CHANNEL,  
MARICOPA COUNTY,  
ARIZONA

**DEPARTMENT OR AGENCY**

**DEPARTMENT OF THE ARMY**

**BY (Issuing office)**

**U. S. ARMY ENGINEER DISTRICT, LOS ANGELES**

**Scaled bids in duplicate for the work described herein will be received until 1 p.m. local time at the place of bid opening, 25 September 1980**

at Room 1030(South Tower), 2721 North Central Avenue, Phoenix, Arizona 85004

**and at that time publicly opened.**

**Information regarding bidding material, bid guarantee, and bonds**

**BID BONDS.** Each bidder shall submit with his bid a Bid Bond (Standard Form 24) with good and sufficient surety or sureties acceptable to the Government, or other security as provided in paragraph 4 of Instructions to Bidders (Standard Form 22) in the form of 20% of the bid price or \$3,000,000, whichever is lesser. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

**PERFORMANCE AND PAYMENT BONDS.** Within 5 days after the prescribed forms are presented to the bidder to whom award is made for signature, a written contract on the form prescribed by the specifications shall be executed and two bonds, each with good and sufficient surety or sureties acceptable to the Government, furnished; namely a performance bond (Standard Form 25) and a payment bond (Standard Form 25-A). The penal sums of such bonds will be as follows:

(a) Performance Bond. The penal sum of the performance bond shall equal 100% of the contract price.

(b) Payment Bond.

(1) When the contract price is \$1,000,000 or less, the penal sum will be 50% of the contract price

(2) When the contract price is in excess of \$1,000,000, but not more than \$5,000,000 the penal sum shall be 40% of the contract price.

(3) When the contract price is more than \$5,000,000, the penal sum shall be \$2,500,000.

Any bonds furnished will be furnished by the Contractor to the Government prior to commencement of contract performance.

NOTE: For bids less than \$25,000, bid bonds, performance and payment bonds will not be required.

**Description of work**

The work consists of construction of approximately 7,500 linear feet of topsoil lined interceptor; 7,200 linear feet of concrete lining on existing Arizona Canal; concrete side spillway; grouted stone protection; asphalt concrete paving; concrete driveways; recorder house; and appurtenant work.

THE ESTIMATED COST OF CONSTRUCTION IS BETWEEN \$1,000,000 AND \$5,000,000.

8/25/77

**READ THE FOLLOWING IN CONJUNCTION WITH INSTRUCTIONS TO BIDDERS (U. S. STANDARD FORM 22).**

1. **PLANT AND EQUIPMENT.** Each bidder shall, upon request of the Contracting Officer, furnish a list of the plant available to the bidder and proposed for use on the work.

2. **MODIFICATIONS PRIOR TO DATE SET FOR OPENING BIDS.** The right is reserved, as the interest of the Government may require, to revise or amend the specifications or drawings, or both prior to the date set for opening bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this Invitation for Bids. If the revisions and amendments are of a nature which requires material changes in quantities or prices bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of the District Engineer will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids.

3. **BIDDERS** are required to acknowledge receipt of all amendments to this Invitation on the Bid Form (Standard Form 21) in the space provided, or by separate letter or telegram prior to opening of Bids. Failure to acknowledge all amendments may cause the rejection of the bid.

4. **NOTICE REGARDING BUY AMERICAN ACT (1970 SEP).** The Buy American Act (41 U.S.C. 10a-10d) generally requires that only domestic construction material be used in the performance of this contract. Exception from the Buy American Act shall be permitted only in the case of nonavailability of domestic construction materials. A bid or proposal offering nondomestic construction material will not be accepted unless specifically approved by the Government. When a bidder or offeror proposes to furnish nondomestic construction material, his bid or proposal must set forth an itemization of the quantity, unit price, and intended use of each item of such nondomestic construction material. When offering nondomestic construction material pursuant to this paragraph, bids or proposals may also offer, at stated prices, any available comparable domestic construction material, so as to avoid the possibility that failure of a nondomestic construction material to be acceptable under this paragraph will cause rejection of the entire bid.

5. **AVAILABILITY OF SPECIFICATIONS, STANDARDS AND DESCRIPTIONS (1977 JUN)** Specifications, standards and descriptions cited in this solicitation are available as indicated below:

5.1 **Unclassified Federal, Military and Other Specifications and Standards (Excluding Commercial), and Data Item Descriptions.** Submit request on DD Form 1425 (Specifications and Standards Requisition) to:

Commanding Officer  
U.S. Naval Publications and Forms Center  
5801 Tabor Avenue - Philadelphia, Pa. 19120

The Acquisition Management Systems and Data Requirements Control List, DoD Directive 5000.19-L, Volume II, may be ordered on the DD Form 1425. The Department of Defense Index of Specifications and Standards (DODISS) may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C., 20402. When requesting a specification or standard, the request shall indicate the title, number, date and any applicable amendment thereto by number and date. When requesting a data item description, the request shall cite the applicable data item number set forth in the solicitation. When DD Form 1425 is not available, the request may be submitted in letter form, giving the same information as listed above, and the solicitation or contract number involved. Such requests may also be made to the activity by Telex No. 834295, Western Union No. 710-670-1685, or telephone (area code 215-697-3321) in case of urgency.

5.2 **Commercial Specifications, Standards and Descriptions.** These specifications, standards and descriptions are not available from Government sources. They may be obtained from the publishers.

6. **AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS, STANDARDS, DRAWINGS, AND OTHER PERTINENT DOCUMENTS.** The specifications, standards, drawings, and other pertinent documents cited in this solicitation may be examined at the following location:

U.S. Army Engineer District, Los Angeles  
300 No. Los Angeles Street  
Los Angeles, California 90053

7. In addition to the immediate site of construction, the Department of Labor has stated that the Davis-Bacon Act applies to Contractor's operations connected with temporary facilities located off the immediate site of construction such as batch plants, sand pits, rock quarries and similar operations which have been set up exclusively to furnish materials for the contract. Therefore, employees related to these temporary facilities are considered on-site employees, and the Contractor shall maintain complete records as set out in the Labor Standards Provisions of the contract.

8. The Government further reserves the right to make award of any or all schedules of any bid, unless the bidder qualifies such bid by specific limitation; also to make award to the bidder whose aggregate bid on any combination of bid schedules is low. For the purpose of this Invitation for Bids, the word "item" as used in paragraph 10(c) of Standard Form 22, shall be considered to mean "schedule."

10/11/65

3/22/65

1/13/65

12/1/70

8/25/77

4/15/71

Read the following in conjunction with instructions to bidders (U.S. Standard Form 22.)

9. **DRAWINGS.** Sets of drawings, (half-size,) and of specifications will be furnished upon receipt of payment of \$1.80 per set. If individual plan sheets are requested, they will be furnished at the rate of (\$0.10 for half size,) for each sheet requested, but with a minimum charge of \$1.00. The maximum charge shall not exceed the charge for a full set of plans. No refund of the payment for drawings will be made and the drawings will be made and the drawings need not be returned to the District Engineer. Additional copies of the specifications alone will be furnished an applicant at rate of \$1.00 per copy. Payments will be made by cash, check or money order and delivered to the U.S. Army Engineer District, Los Angeles, 300 North Los Angeles Street, Los Angeles, California. Checks and money should be made payable to "Treasurer of the United States."

10. **HAND CARRIED BIDS.** Hand carried bids shall be deposited in Room 1030 (South Tower), 2721 North Central Avenue, Phoenix, Arizona prior to the time and date set for opening of bids or bids may be delivered to Room 1030 immediately prior to bid opening time.

11. **TELEGRAPHIC MODIFICATIONS TO BIDS** should be addressed to:

U.S. Army Engineer District, Los Angeles  
Resident Office  
2721 North Central Avenue  
Phoenix, Arizona 85004

12. **NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.**

13. **NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION.** Bidders or offerors and applicants are cautioned to note the "Certification of Non-Segregated Facilities" in the solicitation. Failure of a bidder or offeror to agree to the certification will render his bid or offer nonresponsive to the terms of solicitation involving awards of contracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause. (1975 OCT)

14. **ADDITIONAL INFORMATION** pertaining to these plans and specifications may be obtained by writing or calling (collect calls not accepted) U.S. Army Engineer District, Los Angeles, Attn: Mr. S. M. Ackerman, P.O. Box 2711, Los Angeles, California 90053. Telephone 213 688-5493.

15. **ARITHMETIC DISCREPANCIES.**

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

(1) Obviously misplaced decimal points will be corrected;

(2) In case of discrepancy between unit price and extended price, the unit price will govern;

(3) Apparent errors in extension of unit prices will be corrected;

and

(4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purposes of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, extensions, and totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

16. SITE INSPECTION. Arrangements for visiting the site may be made by contacting Mr. Edgar Dunningan, Project Office, Indian Bend Wash, Telephone (602) 992-6848

17. MINIMUM ACCEPTANCE PERIOD (1975 MAR). Bids allowing less than the number of calendar days specified in the "Bid" portion of SF 19 (or on the reverse of SF 21 as applicable) for acceptance by the Government will be rejected as nonresponsive.

18. PRE-AWARD ON SITE EQUAL OPPORTUNITY COMPLIANCE REVIEW (1970 AUG). In accordance with regulations of the Office of Federal Contract Compliance, 41 CFR 60.1, effective 1 July 1968, an award in the amount of \$1,000,000 or more will not be made under this solicitation unless the bidder and each of his known first-tier subcontractors (to whom he intends to award a subcontract of \$1,000,000 or more) are found, on the basis of a compliance review, to be able to comply with the provisions of the Equal Opportunity clause of this solicitation.

19. SMALL BUSINESS AND SMALL DISADVANTAGES BUSINESS SUBCONTRACTING PLAN. Bidders are cautioned that failure of any Contractor to comply in good faith with (i) the clause entitled "Utilization of Small Business Concerns and Small Disadvantaged Business Concerns, or (ii) the terms of any Subcontracting plan required by the "Small Business and Small Disadvantaged Business Subcontracting Plan" provision, will be a material breach of the contract. In order to assist prime Contractors in developing a source list of small disadvantaged business concern you are encouraged to contact minority Contractor Associations, the office of Minority Business Enterprise, and the appropriate Business Development Center, addresses of which may be obtained from:

Write U.S. Army Engineer District, Los Angeles  
Corps of Engineers  
P.O. Box 2711  
Los Angeles, CA 90053

Telephone: Mr. John Eugenio  
Small Business and Disadvantaged Business  
Utilization Specialist  
Area Code (213) 688-5664

\* \* \* \* \*

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation in each trade
4/1/78 until 3/31/79	25.0 to 30.0	3.1
4/1/79 until 3/31/80	25.0 to 30.0	5.1
4/1/80 until 3/31/81	25.0 to 30.0	6.9

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is State of Arizona.

(8 May 78)

# INSTRUCTIONS TO BIDDERS

(CONSTRUCTION CONTRACT)

1. **Explanations to Bidders.** Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc., must be requested in writing and with sufficient time allowed for a reply to reach bidders before the submission of their bids. Any interpretation made will be in the form of an amendment of the invitation for bids, drawings, specifications, etc., and will be furnished to all prospective bidders. Its receipt by the bidder must be acknowledged in the space provided on the Bid Form (Standard Form 21) or by letter or telegram received before the time set for opening of bids. Oral explanations or instructions given before the award of the contract will not be binding.

2. **Conditions Affecting the Work.** Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government will assume no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of the contract, unless included in the invitation for bids, the specifications, or related documents.

3. **Bidder's Qualifications.** Before a bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

4. **Bid Guarantee.** Where a bid guarantee is required by the invitation for bids, failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

A bid guarantee shall be in the form of a firm commitment, such as a bid bond, postal money order, certified check, cashier's check, irrevocable letter of credit or, in accordance with Treasury Department regulations, cer-

tain bonds or notes of the United States. Bid guarantees, other than bid bonds, will be returned (a) to unsuccessful bidders as soon as practicable after the opening of bids, and (b) to the successful bidder upon execution of such further contractual documents and bonds as may be required by the bid as accepted.

If the successful bidder, upon acceptance of his bid by the Government within the period specified therein for acceptance (sixty days if no period is specified) fails to execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the bid as accepted within the time specified (ten days if no period is specified) after receipt of the forms by him, his contract may be terminated for default. In such event he shall be liable for any cost of procuring the work which exceeds the amount of his bid, and the bid guarantee shall be available toward offsetting such difference.

5. **Preparation of Bids.** (a) Bids shall be submitted on the forms furnished, or copies thereof, and must be manually signed. If erasures or other changes appear on the forms, each erasure or change must be initialed by the person signing the bid. Unless specifically authorized in the invitation for bids, telegraphic bids will not be considered.

(b) The bid form may provide for submission of a price or prices for one or more items, which may be lump sum bids, alternate prices, scheduled items resulting in a bid on a unit of construction or a combination thereof, etc. Where the bid form explicitly requires that the bidder bid on all items, failure to do so will disqualify the bid. When submission of a price on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(c) Unless called for, alternate bids will not be considered.

(d) Modifications of bids already submitted will be considered if received at the office designated in the invitation for bids by the time set for opening of bids. Telegraphic modifications will be considered, but should not reveal the amount of the original or revised bid.

6. **Submission of Bids.** Bids must be sealed, marked, and addressed as directed in the invitation for bids. Failure to do so may result in a premature opening of, or a failure to open, such bid.

~~7. **Late Bids and Modifications or Withdrawals**~~

(This paragraph applies to all advertised solicitations. In the case of Department of Defense negotiated solicitations, it shall also apply to late offers and modifications (other than the normal revisions of offers by selected offerors during the usual conduct of negotiations with such offerors) but not to withdrawal of offers. Unless otherwise provided, this paragraph does not apply to negotiated solicitations issued by civilian agencies.)

(a) Bids and modifications or withdrawals thereof received at the office designated in the invitation for bids after the exact time set for opening of bids will not be considered unless: (1) They are received before award is made; and either (2) they are sent by registered mail, or by certified mail for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the Government that the late receipt was due solely to delay in the mails for which the bidder was not responsible; or (3) if submitted by mail (or by telegram if authorized), it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation: *Provided*, That timely receipt at such installation is established upon examination of an appropriate date or time stamp (if any) of such installation or of other documentary evidence of receipt (if readily available) within the control of such installation or of the post office serving it. However, a modification which makes the terms of the otherwise successful bid more favorable to the Government will be considered at any time it is received and may thereafter be accepted.

(b) Bidders using certified mail are cautioned to obtain a Receipt for Certified Mail showing a legible, dated postmark and to retain such receipt against the chance that it will be required as evidence that a late bid was timely mailed.

(c) The time of mailing of late bids submitted by registered or certified mail shall be deemed to be the last minute of the date shown in the postmark on the registered mail receipt or registered mail receipt on

~~the Receipt for Certified Mail unless the bidder furnishes evidence from the post office station of mailing which establishes an earlier time. In the case of certified mail, the only acceptable evidence is as follows: (1) Where the Receipt for Certified Mail identifies the post office station of mailing, evidence furnished by the bidder which establishes that the business day of that station ended at an earlier time, in which case the time of mailing shall be deemed to be the last minute of the business day of that station; or (2) an entry in ink on the Receipt for Certified Mail showing the time of mailing and the initials of the postal employee receiving the item and making the entry, with appropriate written verification of such entry from the post office station of mailing, in which case the time of mailing shall be the time shown in the entry. If the postmark on the original Receipt for Certified Mail does not show a date, the bid shall not be considered.~~

~~8. **Withdrawal of Bids.** Bids may be withdrawn by written or telegraphic request received from bidders prior to the time set for opening of bids.~~

9. **Public Opening of Bids.** Bids will be publicly opened at the time set for opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.

10. **Award of Contract.** (a) Award of contract will be made to that responsible bidder whose bid, conforming to the invitation for bids, is most advantageous to the Government, price and other factors considered.

(b) The Government may, when in its interest, reject any or all bids or waive any informality in bids received.

(c) The Government may accept any item or combination of items of a bid, unless precluded by the invitation for bids or the bidder includes in his bid a restrictive limitation.

11. **Contract and Bonds.** The bidder whose bid is accepted will, within the time established in the bid, enter into a written contract with the Government and, if required, furnish performance and payment bonds on Government standard forms in the amounts indicated in the invitation for bids or the specifications.

Paragraph 12 below replaces paragraphs 7 and 8 of Standard Form 22 which have been deleted.

12. LATE BIDS, MODIFICATIONS OF BIDS OR WITHDRAWAL OF BIDS (1979 MAR)

(a) Any bid received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and either:

(i) it was sent by registered or certified mail not later than the fifth calendar day prior to the date specified for the receipt of bids (e.g., a bid submitted in response to a solicitation requiring receipt of bids by the 20th of the month must have been mailed by the 15th or earlier); or,

(ii) it was sent by mail (or telegram if authorized) and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

(b) Any modification or withdrawal of bid is subject to the same conditions as in (a) above except that withdrawal of bids by telegram is authorized. A bid may also be withdrawn in person by a bidder or his authorized representative, provided his identity is made known and he signs a receipt for the bid, but only if the withdrawal is made prior to the exact time set for receipt of bids.

(c) The only acceptable evidence to establish:

(i) the date of mailing of a late bid, modification or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the bid, modification or withdrawal shall be deemed to have been mailed late. (The term "postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed on the date of mailing by employees of the U.S. or Canadian Postal Service. Therefore, offerors should request the postal clerk to place a hand cancellation bull's eye "postmark" on both the receipt and the envelope or wrapper.)

(ii) the time of receipt at the Government installation is the time/date stamp of such installation on the bid wrapper or other documentary evidence of receipt maintained by the installation.

(d) Notwithstanding the above, a late modification of an otherwise successful bid which makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

NOTE: The term "telegram" includes mailgrams.

(Oct 79)

**BID FORM**  
**(CONSTRUCTION CONTRACT)**

REFERENCE

DACW09-80-B-0047

*Read the Instructions to Bidders (Standard Form 22)*  
*This form to be submitted in duplicate*

DATE OF INVITATION

80 AUG 26

NAME AND LOCATION OF PROJECT

INDIAN BEND WASH,  
INTERCEPTOR CHANNEL,  
MARICOPA COUNTY,  
ARIZONA

NAME OF BIDDER (*Type or print*)

(Date)

TO: U. S. ARMY ENGINEER DISTRICT, LOS ANGELES  
P. O. Box 2711  
Los Angeles, California 90053

In compliance with the above-dated invitation for bids, the undersigned hereby proposes to perform all work for the construction of Interceptor Channel, Lining, Arizona Canal, side sideway and appurtenant work.

in strict accordance with the General Provisions, specifications, schedules, drawings, and conditions, for the amounts set forth in the attached Bidding Schedule.

**EQUAL EMPLOYMENT COMPLIANCE (1978 SEP)** By submission of this offer, the offeror represents that, to the best of his knowledge and belief, except as noted below, up to the date of this offer no written notice such as a show cause letter, a letter indicating probable cause, or any other written notification citing specific deficiencies, has been received by the offeror from any Federal Government agency or representative thereof that the offeror or any of its divisions or affiliates or known first-tier subcontractors is in violation of any of the provisions of Executive Order 11246 of September 24, 1965, as amended, or rules and regulations of the Secretary of Labor (41 CFR, Chapter 60) and specifically as to not having an acceptable affirmative action compliance program or being in noncompliance with any other aspect of the Equal Employment Opportunity Program. It is further agreed that should there be any change (i) in the offeror's status or circumstances between this date and the date of expiration of this offer or any extension thereof, or (ii) during any contract or extension thereof resulting from this solicitation, the Contracting Office will be notified promptly.

The undersigned agrees that, upon written acceptance of this bid, mailed or otherwise furnished within 30 calendar days ~~(unless a longer period is allowed)~~ after the date of opening of bids, he will within 5 calendar days (unless a longer period is allowed) after receipt of the prescribed forms, execute Standard Form 23, Construction Contract, and give performance and payment bonds on Government standard forms with good and sufficient surety. (See paragraph No. 17 of the Invitation for Bids).

The undersigned agrees, if awarded the contract, to commence and to complete the work in accordance with the stipulations of Paragraph 1. of the SPECIAL PROVISIONS.

RECEIPT OF AMENDMENTS: *The undersigned acknowledges receipt of the following amendments of the invitation for bids, drawings, and/or specifications, etc. (Give number and date of each):*

The representations and certifications on the accompanying STANDARD FORM 19-B are made a part of this bid.

ENCLOSED IS BID GUARANTEE, CONSISTING OF		IN THE AMOUNT OF
NAME OF BIDDER (Type or print)	FULL NAME OF ALL PARTNERS (Type or print)	
BUSINESS ADDRESS (Type or print) (Include "ZIP Code")		
BY (Signature in ink. Type or print name under signature)		
TITLE (Type or print)		

DIRECTIONS FOR SUBMITTING BIDS: *Envelopes containing bids, guarantee, etc., must be sealed, marked, and addressed as follows:*

Envelopes shall be marked in the upper left hand corner Bid Under Reference No.

DACW09-80-B-0047

Envelopes shall be addressed:  
 U.S. ARMY ENGINEER DISTRICT  
 Phoenix Resident Office  
 2721 North Central Avenue  
 Phoenix, Arizona 85004

**CAUTION—Bids should not be qualified by exceptions to the bidding conditions.**

BIDDING SCHEDULE

<u>Item No.</u>	<u>Description</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
1.	DIVERSION AND CONTROL OF WATER	1	Job	L.S.	_____
2.	CLEARING SITE AND REMOVING OBSTRUCTIONS	1	Job	L.S.	_____
3.	EXCAVATION, CHANNEL	272,000	Cu. Yd.	_____	_____
4.	FILL, CHANNEL	3,800	Cu. Yd.	_____	_____
5.	FILL, LEVEE	2,800	Cu. Yd.	_____	_____
6.	FILL, TOE	2,200	Cu. Yd.	_____	_____
7.	FILL, TOPSOIL	20,800	Cu. Yd.	_____	_____
8.	CONCRETE, INVERT	9,500	Cu. Yd.	_____	_____
9.	CONCRETE, SIDE SLOPES	2,600	Cu. Yd.	_____	_____
10.	CONCRETE, SPILLWAY	930	Cu. Yd.	_____	_____
11.	CONCRETE DRIVEWAY	4	Each	_____	_____
12.	STONE PROTECTION	7,900	Ton	_____	_____
13.	GROUTING STONE PROTECTION	1,560	Cu. Yd.	_____	_____
14.	ASPHALT CONCRETE PAVING	1,600	Ton	_____	_____
15.	PIPE GATE	6	Each	_____	_____
16.	STATION MARKING	1	Job	L.S.	_____
17.	GAGING STATION	1	Job	L.S.	_____
18.	CONCRETE PROTECTION, 8-INCH SEWERLINE	1	Job	L.S.	_____
19.	ADJUST MANHOLE TO GRADE	1	Job	L.S.	_____

TOTAL AMOUNT \$ \_\_\_\_\_

NOTE: All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and the extension, the unit price will be considered to be the bid.

If a bid or modification to a bid based on unit prices is submitted which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bidding schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bidding schedule.

Bids shall be submitted on all items of the Bidding Schedule.

Amounts and prices shall be indicated in either figures or words, not both.

# REPRESENTATIONS AND CERTIFICATIONS

(Construction and Architect-Engineer Contract)

(For use with Standard Forms 19, 21 and 252)

REFERENCE (Enter same No.(s) as on SF 19, 21 and 252)

NAME AND ADDRESS OF BIDDER (No., Street, City, State, and ZIP Code)

DATE OF BID

*In negotiated procurements, "bid" and "bidder" shall be construed to mean "offer" and "offeror."*

The bidder makes the following representations and certifications as a part of the bid identified above. (Check appropriate boxes.)

## 1. SMALL BUSINESS

He  is,  is not, a small business concern. (A small business concern for the purpose of Government procurement is a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operations in which it is bidding on Government contracts, and can further qualify under the criteria concerning number of employees, average annual receipts, or other criteria as prescribed by the Small Business Administration. For additional information see governing regulations of the Small Business Administration (13 CFR Part 121)).

## 2. MINORITY BUSINESS ENTERPRISE

He  is,  is not a minority business enterprise. A minority business enterprise is defined as a "business, at least 50 percent of which is owned by minority group members or, in case of publicly owned businesses, at least 51 percent of the stock of which is owned by minority group members." For the purpose of this definition, minority group members are Negroes, Spanish-speaking American persons, American-Orientals, American-Indians, American-Eskimos, and American-Aleuts."

## 3. CONTINGENT FEE

(a) He  has,  has not, employed or retained any company or person (other than a full-time bona fide employee working solely for the bidder) to solicit or secure this contract, and (b) he  has,  has not, paid or agreed to pay any company or person (other than a full-time bona fide employee working solely for the bidder) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of this contract; and agrees to furnish information relating to (a) and (b) above as requested by the Contracting Officer. (For interpretation of the representation, including the term "bona fide employee," see Code of Federal Regulations, Title 41, Subpart 1-1.5.)

## 4. TYPE OF ORGANIZATION

He operates as an  individual,  partnership,  joint venture,  corporation, incorporated in State of .....

## 5. INDEPENDENT PRICE DETERMINATION

(a) By submission of this bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that in connection with this procurement:

(1) The prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, in the case of a bid, or prior to award, in the case of a proposal, directly or indirectly to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

(b) Each person signing this bid certifies that:

(1) He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein and that he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above; or

(2) (i) He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein but that he has been authorized in writing to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above, and as their agent does hereby so certify; and (ii) he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above.

(c) This certification is not applicable to a foreign bidder submitting a bid for a contract which requires performance or delivery outside the United States, its possessions, and Puerto Rico.

(d) A bid will not be considered for award where (a)(1), (a)(3), or (b) above, has been deleted or modified. Where (a)(2) above, has been deleted or modified, the bid will not be considered for award unless the bidder furnishes with the bid a signed statement which sets forth in detail the circumstances of the disclosure and the head of the agency, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

NOTE: Bids must set forth full, accurate, and complete information as required by this invitation for bids (including attachments). The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

THE FOLLOWING NEED BE CHECKED ONLY IF BID EXCEEDS \$10,000 IN AMOUNT.

### 6. EQUAL OPPORTUNITY

He  has,  has not, participated in a previous contract or subcontract subject to the Equal Opportunity Clause herein, the clause originally contained in Section 301 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114; he  has,  has not, filed all required compliance reports; and representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained prior to subcontract awards.

(The above representations need not be submitted in connection with contracts or subcontracts which are exempt from the equal opportunity clause.)

### 7. PARENT COMPANY AND EMPLOYER IDENTIFICATION NUMBER

Each bidder shall furnish the following information by filling in the appropriate blocks:

(a) Is the bidder owned or controlled by a parent company as described below?  Yes  No. (For the purpose of this bid, a parent company is defined as one which either owns or controls the activities and basic business policies of the bidder. To own another company means the parent company must own at least a majority (more than 50 percent) of the voting rights in that company. To control another company, such ownership is not required; if another company is able to formulate, determine, or veto basic business policy decisions of the bidder, such other company is considered the parent company of the bidder. This control may be exercised through the use of dominant minority voting rights, use of proxy voting, contractual arrangements, or otherwise.)

(b) If the answer to (a) above is "Yes," bidder shall insert in the space below the name and main office address of the parent company.

NAME OF PARENT COMPANY

MAIN OFFICE ADDRESS (No., Street, City, State, and ZIP Code)

(c) Bidder shall insert in the applicable space below, if he has no parent company, his own Employer's Identification Number (E.I. No.) (Federal Social Security Number used on Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941), or, if he has a parent company, the E.I. No. of his parent company.

EMPLOYER IDENTIFICATION NUMBER OF



PARENT COMPANY

BIDDER

### 8. CERTIFICATION OF NONSEGREGATED FACILITIES

(Applicable to (1) contracts, (2) subcontracts, and (3) agreements with applicants who are themselves performing federally assisted construction contracts, exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause.)

By the submission of this bid, the bidder, offeror, applicant, or subcontractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder, offeror, applicant, or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files; and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

#### NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A Certification of Nons segregated Facilities must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

### 9. CLEAN AIR AND WATER

(Applicable if the bid or offer exceeds \$100,000, or the contracting officer has determined that orders under an indefinite quantity contract in any year will exceed \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857c-8(c)(1)) or the Federal Water Pollution Control Act (33 U.S.C. 1319(c)) and is listed by EPA, or is not otherwise exempt.)

The bidder or offeror certifies as follows:

(a) Any facility to be utilized in the performance of this proposed contract has , has not , been listed on the Environmental Protection Agency List of Violating Facilities.

(b) He will promptly notify the contracting officer, prior to award, of the receipt of any communication from the Director, Office of Federal Activities, Environmental Protection Agency, indicating that any facility which he proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities.

(c) He will include substantially this certification, including this paragraph (c), in every nonexempt subcontract.

Alterations to Standard Form 19-B, REPRESENTATIONS AND CERTIFICATIONS

Delete Item No. 2, MINORITY BUSINESS ENTERPRISE and insert the following:

2. SMALL DISADVANTAGED BUSINESS CONCERN

(a) He  is,  is not, a small business concern owned and controlled by socially and economically disadvantaged individuals. The term "small business concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto. The term "small business concern owned and controlled by socially and economically disadvantaged individuals" means a small business concern-

(1) that is at least 51 per centum owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more socially or economically disadvantaged individuals; and

(2) whose management and daily business operations are controlled by one or more such individuals.

(b) The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans (such as American Indians, Eskimos, Aleuts, and native Hawaiians), and other minorities or any other individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act.

After Item No. 3, CONTINGENT FEE, the following clause has been added:

"If the offeror/quoter, by checking the appropriate box provided therefor, has represented that he has employed or retained a company or person (other than a full-time bona fide employee working solely for the offeror/quoter) to solicit or secure this contract, or that he has paid or agreed to pay any fee, commission, percentage, or brokerage fee to any company or person contingent upon or resulting from the award of this contract, he shall furnish, in duplicate, a complete Standard Form 119, Contractor's Statement of Contingent or Other Fees. If offeror/quoter has previously furnished a completed Standard Form 119 to the office issuing this solicitation, he may accompany his proposal/quotation with a signed statement (a) indicating when such completed form was previously furnished, (b) identifying by number the previous solicitation or contract, if any, in connection with which such form was submitted, and (c) representing that the statement in such form is applicable to this proposal/quotation."  
(ASPR 7-2002.1)

Standard Form 19-B, REPRESENTATIONS AND CERTIFICATIONS (continued)

The bidder makes the following representations and certifications as a part of the bid identified hereinbefore. (Check appropriate boxes).

10. WOMAN-OWNED BUSINESS.

He  is,  is not, a woman-owned business. A woman-owned business is a business which is, at least, 51 percent owned, controlled and operated by a woman or women. Controlled is defined as exercising the power to make policy decisions. Operated is defined as actively involved in the day-to-day management. For the purposes of this definition, businesses which are publicly owned, joint stock associations, and business trusts are exempted. Exempted businesses may voluntarily represent that they are, or are not, women-owned if this information is available.

11. PERCENT FOREIGN CONTENT.

Approximately \_\_\_\_\_ percent of the proposed contract price represents foreign content or effort.

12. CERTIFICATION-WAGE AND PRICE STANDARDS

(Applicable to awards in excess of \$5 million, and awards of indefinite delivery type contracts under which cumulative orders are expected to exceed \$5 million.)

(a) By submission of this bid or offer, the bidder or offeror certifies that he is in compliance with the Wage and Price Standards issued by the Council on Wage and Price Stability (6 CFR Part 705, Appendix, and Part 706).

(b) The clause entitled, "Certification - Wage and Price Standards," set forth elsewhere in this solicitation, shall be incorporated in any resulting contract except where waived by agency head involved.

STANDARD FORM 23  
JANUARY 1961 EDITION  
GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

# CONSTRUCTION CONTRACT

(See instructions on reverse)

CONTRACT NO.

DATE OF CONTRACT

Rev. LAD Nov. 70

NAME AND ADDRESS OF CONTRACTOR

CHECK APPROPRIATE BOX

- Individual
- Partnership
- Joint Venture
- Corporation, incorporated in the  
State of \_\_\_\_\_

DEPARTMENT OR AGENCY

CONTRACT FOR (*Work to be performed*)

PLACE

CONTRACT PRICE (*Express in words and figures*)

ADMINISTRATIVE DATA (*Optional*)

The United States of America (hereinafter called the Government), represented by the Contracting Officer executing this contract, and the individual, partnership, joint venture, or corporation named above (hereinafter called the Contractor), mutually agree to perform this contract in strict accordance with the General Provisions, and the following designated specifications, schedules, drawings, and conditions:

WORK SHALL BE STARTED

WORK SHALL BE COMPLETED

*Alterations.* The following alterations were made in this contract before it was signed by the parties hereto:

In witness whereof, the parties hereto have executed this contract as of the date entered on the first page hereof.

THE UNITED STATES OF AMERICA

CONTRACTOR

By \_\_\_\_\_

\_\_\_\_\_  
*(Name of Contractor)*

\_\_\_\_\_  
*(Official title)*

By \_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Title)*

---

### INSTRUCTIONS

1. The full name and business address of the Contractor must be inserted in the space provided on the face of the form. The Contractor shall sign in the space provided above with his usual signature and typewrite or print his name under the signature.

2. An officer of a corporation, a member of a partnership, or an agent signing for the Contractor shall place his signature and title after the word "By" under the name of the Contractor. A contract executed by an attorney or agent on behalf of the Contractor shall be accompanied by two authenticated copies of his power of attorney or other evidence of his authority to act on behalf of the Contractor.

INDEX OF GENERAL PROVISIONS  
(Construction Contract)  
Edition of 29 July 1980

- 1.1 Definitions
- 1.2 Definitions
2. Specifications and Drawings
3. Changes
4. Differing Site Conditions
5. Termination for Default-Damages for Delay-Time Extensions
6. Disputes
7. Payments to Contractor
8. Assignment of Claims
9. Material and Workmanship
10. Inspection and Acceptance
11. Superintendence by Contractor
12. Permits and Responsibilities
13. Conditions Affecting the Work
14. Other Contracts
15. Shop Drawings
16. Use and Possession Prior to Completion
17. Suspension of Work
18. Termination for Convenience of the Government-Construction
19. Pricing of Adjustments
20. Patent Indemnity
21. Additional Bond Security
22. Examination of Records by Comptroller General
23. Buy American Act
24. Equal Opportunity

25. Covenant Against Contingent Fees
26. Officials Not to Benefit
27. Convict Labor
28. Utilization of Small Business and Small Disadvantaged Business Concerns
29. Federal, State and Local Taxes
30. Davis-Bacon Act
31. Contract Work Hours and Safety Standards Act-Overtime Compensation
32. Apprentices and Trainees
33. Payrolls and Basic Records
34. Compliance with Copeland Regulations
35. Withholding of Funds
36. Subcontracts
37. Contract Termination-Debarment
38. Disputes Concerning Labor Standards
39. Contractor Inspection System
40. Gratuities
41. Subcontracting Plan for Small Business and Small Disadvantaged Business Concerns (Formally Advertised)
42. Notice and Assistance Regarding Patent and Copyright Infringement
43. Authorization and Consent
44. Composition of Contractor
45. Site Investigation
46. Protection of Existing Vegetation, Structures, Utilities, and Improvements
47. Operations and Storage Areas
48. Modification Proposals-Price Breakdown
49. Subcontractors
50. Cleaning Up
51. Additional Definitions

52. Accident Prevention
53. Government Inspectors
54. Rights in Shop Drawings
55. Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era
56. Value Engineering Incentive
57. Affirmative Action for Handicapped Workers
58. Clean Air and Water
59. Notice to the Government of Labor Disputes
60. Contract Prices-Bidding Schedule
61. Priorities, Allocations, and Allotments
62. Price Reduction for Defective Cost or Pricing Data-Price Adjustments
63. Interest
64. Audit by Department of Defense
65. Subcontractor Cost or Pricing Data-Price Adjustments
- 66.1 Government-Furnished Property (Short Form)
- 66.2 Government Property (Fixed Price)
67. Variations in Estimated Quantities
68. Progress Charts and Requirements for Overtime Work
69. Certification of Requests for Adjustment or Relief Exceeding \$100,000
70. Affirmative Action Compliance Requirements for Construction
71. Geographic Distribution of Defense Subcontract Dollars
72. Contract Certification - Wage and Price Standards
73. Environmental Litigation

GENERAL PROVISIONS  
(Construction Contract)  
(Edition of 29 July 1980)

Issued By: Department of the Army, Corps of Engineers

(General Provisions 1 through 29 and 30 through 38 are those prescribed by the General Services Administration in Standard Form 23-A, April 1975 edition and Standard Form 19-A, January 1979 edition, respectively, as amended pursuant to the latest revisions of the Defense Acquisition Regulation and Engineer Contract Instructions, ER 1180-1-1.)

1.1 DEFINITIONS

(The following clause is applicable if the procurement instrument identification number is prefixed by the letters "DACW")

(a) The term "head of the agency" or "Secretary" as used herein means the Secretary of the Army; and the term "his duly authorized representative" means the Chief of Engineers, Department of the Army, or an individual or board designated by him.

(b) The term "Contracting Officer" as used herein means the person executing this contract on behalf of the Government and includes a duly appointed successor or authorized representative. (DAR 7-602.1 & ECI 7-070)

1.2 DEFINITIONS (1964 JUN)

(The following clause is applicable if the procurement instrument identification number is prefixed by the letters "DACA")

(a) The term "head of the agency" or "Secretary" as used herein means the Secretary, the Under Secretary, any Assistant Secretary, or any other head or assistant head of the executive or military department or other Federal agency; and the term "his duly authorized representative" means any person or persons or board (other than the Contracting Officer) authorized to act for the head of the agency or the Secretary.

(b) The term "Contracting Officer" as used herein means the person executing this contract on behalf of the Government and includes a duly appointed successor or authorized representative. (DAR 7-602.1)

2. SPECIFICATIONS AND DRAWINGS (1964 JUN)

The Contractor shall keep on the work a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy either in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at his own risk and expense. The Contracting Officer shall furnish from time to time such detail drawings and other information as he may consider necessary, unless otherwise provided. (DAR 7-602.2)

3. CHANGES (1968 FEB)

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make any change in the work within the general scope of the contract, including but not limited to changes:

- (i) in the specifications (including drawings and designs);
- (ii) in the method or manner of performance of the work;
- (iii) in the Government-furnished facilities, equipment, materials, services, or site; or
- (iv) directing acceleration in the performance of the work.

(b) Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the Contracting Officer, which causes any such change, shall be treated as a change order under this clause, provided, that the Contractor gives the Contracting Officer written notice stating the date, circumstances, and source of the order and that the Contractor regards the order as a change order.

(c) Except as herein provided, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly: Provided however, That except for claims based on defective specifications, no claim for any change under (b) above shall be allowed for any costs incurred more than 20 days before the Contractor gives written notice as therein required: And provided further, That in the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with such defective specifications.

(e) If the Contractor intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the Contracting Officer a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the Government. The statement of claim hereunder may be included in the notice under (b) above.

(f) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract. (DAR 7-602.3)

#### 4. DIFFERING SITE CONDITIONS (1968 FEB)

(a) The Contractor shall promptly, and before such conditions are disturbed, notify the Contracting Officer in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this contract. The Contracting Officer shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

(b) No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefor may be extended by the Government.

(c) No claim by the Contractor for an equitable adjustment hereunder

shall be allowed if asserted after final payment under this contract. (DAR 7-602.4)

5. TERMINATION FOR DEFAULT - DAMAGES FOR DELAY - TIME EXTENSIONS (1969 AUG)

(a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within such time, the Government may, by written notice to the Contractor, terminate his right to proceed with the work or such part of the work as to which there has been delay. In such event the Government may take over the work and prosecute the same to completion, by contract or otherwise, and may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefor. Whether or not the Contractor's right to proceed with the work is terminated, he and his sureties shall be liable for any damage to the Government resulting from his refusal or failure to complete the work within the specified time.

(b) If fixed and agreed liquidated damages are provided in the contract and if the Government so terminates the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If fixed and agreed liquidated damages are provided in the contract and if the Government does not so terminate the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until the work is completed or accepted.

(d) The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:

(1) The delay in the completion of the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any such delay (unless the Contracting Officer grants a further period of time before the date of final payment under the contract), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay and extend the time for completing the work when, in his judgment, the findings of fact justify such an extension, and his findings of fact shall be final and conclusive on the parties, subject only to appeal as provided in the "Disputes" clause of this contract.

(e) If, after notice of termination of the Contractor's right to proceed under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the Government, be the same as if the notice of termination had been issued pursuant to such clause. If, in the foregoing circumstances, this contract does not contain a clause providing for

termination for convenience of the Government, the contract shall be equitably adjusted to compensate for such termination and the contract modified accordingly; failure to agree to any such adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes."

(f) The rights and remedies of the Government provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

(g) As used in paragraph (d)(1) of this clause, the term "subcontractors or suppliers" means subcontractors or suppliers at any tier. (DAR 7-602.5)

#### 6. DISPUTES (1980 JUN)

(a) This contract is subject to the Contract Disputes Act of 1978 (P.L. 95-563).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved in accordance with this clause.

(c) (i) As used herein, "claim" means a written demand or assertion by one of the parties seeking, as a matter of right, the payment of money, adjustment or interpretation of contract terms, or other relief, arising under or relating to this contract. However, a written demand by the contractor seeking the payment of money in excess of \$50,000 is not a claim until certified in accordance with (d) below.

(ii) A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim for the purposes of the Act. However, where such submission is subsequently disputed either as to liability or amount or not acted upon in a reasonable time, it may be converted to a claim pursuant to the Act by complying with the submission and certification requirements of this clause.

(iii) A claim by the contractor shall be made in writing and submitted to the contracting officer for decision. A claim by the Government against the contractor shall be subject to a decision by the Contracting Officer.

(d) For contractor claims of more than \$50,000, the contractor shall submit with the claim a certification that the claim is made in good faith; the supporting data are accurate and complete to the best of the contractor's knowledge and belief; and the amount requested accurately reflects the contract adjustment for which the contractor believes the Government is liable. The certification shall be executed by the contractor if an individual. When the contractor is not an individual, the certification shall be executed by a senior company official in charge at the contractor's plant or location involved, or by an officer or general partner of the contractor having over-all responsibility for the conduct of the contractor's affairs.

(e) For contractor claims of \$50,000 or less, the Contracting Officer must, if requested in writing by the contractor, render a decision within 60 days of the request. For contractor certified claims in excess of \$50,000 the Contracting Officer must decide the claim within 60 days or notify the contractor of the date when the decision will be made.

(f) The Contracting Officer's decision shall be final unless the contractor appeals or files a suit as provided in the Act.

(g) Interest on the amount found due on a contractor claim shall be paid from the date the contracting officer receives the claim, or from the date payment otherwise would be due, if such date is later, until the date of payment.

(h) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal or action arising under the contract, and comply with any decision of the Contracting Officer. (DAR 7-103.12(a))

#### 7. PAYMENTS TO CONTRACTOR (1979 MAR)

(a) The Government will pay the contract price as hereinafter provided.

(b) The Government will make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, in such detail as requested, to provide a basis for determining progress payments. In the preparation of estimates the Contracting Officer, at his discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site may also be taken into consideration (1) if such consideration is specifically authorized by the contract and (2) if the Contractor furnishes satisfactory evidence that he has acquired title to such material and that it will be utilized on the work covered by this contract.

(c) In making such progress payments, there shall be retained 10 percent of the estimated amount until final completion and acceptance of the contract work. However, if the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, he may authorize such payment to be made in full without retention of a percentage. Also, whenever the work is substantially complete, the Contracting Officer shall retain an amount he considers adequate for the protection of the Government, and, at his discretion, may release to the Contractor all or a portion of any excess amount. Furthermore, on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made therefor without retention of a percentage.

(d) All material and work covered by progress payments made shall thereupon become the sole property of the Government, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(e) The Contractor shall, upon request, be reimbursed for the entire amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after furnishing evidence of full payment to the surety.

(f) Upon completion and acceptance of all work, the amount due the Contractor under this contract shall be paid upon the presentation of a properly executed voucher and after the Contractor shall have furnished the Government with a release of all claims against the Government arising by virtue of this contract, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under the contract has been assigned under the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), a release may also be required of the assignee. (DAR 7-602.7)

#### 8. ASSIGNMENT OF CLAIMS (1976 OCT)

(a) Pursuant to the provisions of the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), if this contract provides for

payments aggregating \$1,000 or more, claims for moneys due or to become due the Contractor from the Government under this contract may be assigned to a bank, trust company, or other financing institution, including any Federal lending agency, and may thereafter be further assigned and reassigned to any such institution. Any such assignment or reassignment shall cover all amounts payable under this contract and not already paid, and shall not be made to more than one party, except that any such assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in such financing. Unless otherwise provided in this contract, payments to assignee of any moneys due or to become due under this contract shall not, to the extent provided in said Act, as amended, be subject to reduction or setoff. (The preceding sentence applies only if this contract is made in time of war or national emergency as defined in said Act and is with the Department of Defense, the General Services Administration, the Energy Research and Development Administration, the National Aeronautics and Space Administration, the Federal Aviation Administration, or any other department or agency of the United States designated by the President pursuant to Clause 4 of the provision of section 1 of the Assignment of Claims Act of 1940, as amended by the Act of May 15, 1951, 65 Stat. 41.)

(b) In no event shall copies of this contract or of any plans, specifications, or other similar documents relating to work under this contract, if marked "Top Secret," "Secret," or "Confidential," be furnished to any assignee of any claim arising under this contract or to any other person not entitled to receive the same. However, a copy of any part or all of this contract so marked may be furnished, or any information contained therein may be disclosed, to such assignee upon the prior written authorization of the Contracting Officer. (DAR 7-602.8)

#### 9. MATERIAL AND WORKMANSHIP (1964 JUN)

(a) Unless otherwise specifically provided in this contract, all equipment, material, and articles incorporated in the work covered by this contract are to be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in this contract, reference to any equipment, material, article, or patented process, by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his option, use any equipment, material, article, or process which, in the judgment of the Contracting Officer, is equal to that named. The Contractor shall furnish to the Contracting Officer for his approval the name of the manufacturer, the model number, and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the work. When required by this contract or when called for by the Contracting Officer, the Contractor shall furnish the Contracting Officer for approval full information concerning the material or articles which he contemplates incorporating in the work. When so directed, samples shall be submitted for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles installed or used without required approval shall be at the risk of subsequent rejection.

(b) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may, in writing, require the Contractor to remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable. (DAR 7-602.9)

## 10. INSPECTION AND ACCEPTANCE (1976 OCT)

(a) All work (which term includes but is not restricted to materials, workmanship, and manufacture and fabrication of components) shall be subject to inspection and test by the Government at all reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit of the Government and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the work strictly complies with the contract requirements. No inspection or test by the Government shall be construed as constituting or implying acceptance. Inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Government after acceptance of the completed work under the terms of paragraph (f) of this clause, except as hereinabove provided.

(b) The Contractor shall, without charge, replace any material or correct any workmanship found by the Government not to conform to the contract requirements, unless in the public interest the Government consents to accept such material or workmanship with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(c) If the Contractor does not promptly replace rejected material or correct rejected workmanship, the Government (1) may, by contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or (2) may terminate the Contractor's right to proceed in accordance with the clause of this contract entitled "Termination for Default - Damages for Delay - Time Extensions."

(d) The Contractor shall furnish promptly, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspection and test as may be required by the Contracting Officer. All inspection and test by the Government shall be performed in such manner as not unnecessarily to delay the work. Special, full size, and performance tests shall be performed as described in this contract. The Government reserves the right to charge to the Contractor any additional cost of inspection or test when material or workmanship is not ready at the time specified by the Contractor for inspection or test or when reinspection or retest is necessitated by prior rejection.

(e) Should it be considered necessary or advisable by the Government at any time before acceptance of the entire work to make an examination of work already completed, by removing or tearing out same, the Contractor shall, on request, promptly furnish all necessary facilities, labor and material. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, an equitable adjustment shall be made in the contract price to compensate the Contractor for the additional services involved in such examination and reconstruction and, if completion of the work has been delayed thereby, he shall, in addition, be granted a suitable extension of time.

(f) Unless otherwise provided in this contract, acceptance by the Government shall be made as promptly as practicable after completion and inspection of all work required by this contract, or that portion of the work that the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except as regards latent defects, fraud, or such gross mistakes as may amount to fraud or as regards the Government's rights under any warranty or guarantee. (DAR 7-602.11)

11. SUPERINTENDENCE BY CONTRACTOR (1976 OCT)

The Contractor, at all times during performance and until the work is completed and accepted, shall give his personal superintendence to the work or have on the work a competent superintendent, satisfactory to the Contracting Officer and with authority to act for the Contractor. (DAR 7-602.12)

12. PERMITS AND RESPONSIBILITIES (1964 JUN)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, State, and municipal laws, codes, and regulations, in connection with the prosecution of the work. He shall be similarly responsible for all damages to persons or property that occur as a result of his fault or negligence. He shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. He shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire construction work, except for any completed unit of construction thereof which theretofore may have been accepted. (DAR 7-602.13)

13. CONDITIONS AFFECTING THE WORK (1964 JUN)

The Contractor shall be responsible for having taken steps reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Any failure by the Contractor to do so will not relieve him from responsibility for successfully performing the work without additional expense to the Government. The Government assumes no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of this contract, unless such understanding or representations by the Government are expressly stated in the contract. (DAR 7-602.14)

14. OTHER CONTRACTS (1964 JUN)

The Government may undertake or award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors and Government employees and carefully fit his own work to such additional work as may be directed by the Contracting Officer. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractor or by Government employees. (DAR 7-602.15)

15. SHOP DRAWINGS (1976 OCT)

(a) The term, "shop drawings", includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data; and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract.

(b) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate his approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate his approval or disapproval of the shop drawings and if not approved as submitted shall indicate his reasons therefor. Any work done prior to such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this

contract, except with respect to variations described and approved in accordance with (c) below.

(c) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation(s), he shall issue an appropriate contract modification, except that, if the variation is minor and does not involve a change in price or in time of performance, a modification need not be issued.

(d) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated herein) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated herein) of all shop drawings will be retained by the Contracting Officer and one set will be returned to the Contractor. (DAR 7-602.54(a))

#### 16. USE AND POSSESSION PRIOR TO COMPLETION (1976 OCT)

The Government shall have the right to take possession of or use any completed or partially completed part of the work. Prior to such possession or use, the Contracting Officer shall furnish the Contractor an itemized list of work remaining to be performed or corrected on such portions of the project as are to be possessed or used by the Government, provided that failure to list any item of work shall not relieve the Contractor of responsibility for compliance with the terms of the contract. Such possession or use shall not be deemed an acceptance of any work under the contract. While the Government has such possession or use, the Contractor, notwithstanding the provisions of the clause of this contract entitled "Permits and Responsibilities," shall be relieved of the responsibility for the loss or damage to the work resulting from the Government's possession or use. If such prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment in the contract price or the time of completion will be made and the contract shall be modified in writing accordingly. (DAR 7-602.39)

#### 17. SUSPENSION OF WORK (1968 FEB)

(a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as he may determine to be appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Contracting Officer in the administration of this contract, or by his failure to act within the time specified in this contract (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or (2) for which an equitable adjustment is provided for or excluded under any other provision of this contract.

(c) No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order),

and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the contract. (DAR 7-602.46)

#### 18. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT-CONSTRUCTION (1974 APR)

(a) The performance of work under this contract may be terminated by the Government in accordance with this clause in whole, or from time to time in part, whenever the Contracting Officer shall determine that such termination is in the best interest of the Government. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective.

(b) After receipt of a Notice of Termination, and except as otherwise directed by the Contracting Officer, the Contractor shall:

- (i) stop work under the contract on the date and to the extent specified in the Notice of Termination;
- (ii) place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the contract as is not terminated;
- (iii) terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;
- (iv) assign to the Government, in the manner, at the times, and to the extent directed by the Contracting Officer, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Government shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
- (v) settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Contracting Officer, to the extent he may require, which approval or ratification shall be final for all the purposes of this clause;
- (vi) transfer title and deliver to the Government, in the manner, at the times, and to the extent, if any, directed by the Contracting Officer, (A) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination, and (B) the completed or partially completed plans, drawings, information, and other property which, if the contract had been completed, would have been required to be furnished to the Government;
- (vii) use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the Contracting Officer, any property of the types referred to in (vi) above; provided however, that the Contractor (A) shall not be required to extend credit to any purchaser, and (B) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Contracting Officer; and provided further, that the proceeds of any such transfer or disposition shall be applied in

reduction of any payments to be made by the Government to the Contractor under this contract or shall otherwise be credited to the price or cost of the work covered by this contract or paid in such other manner as the Contracting Officer may direct;

- (viii) complete performance of such part of the work as shall not have been terminated by the Notice of Termination; and
- (ix) take such action as may be necessary, or as the Contracting Officer may direct, for the protection and preservation of the property related to this contract which is in the possession of the Contractor and in which the Government has or may acquire an interest.

At any time after expiration of the plant clearance period, as defined in Section VIII, Defense Acquisition Regulation, as it may be amended from time to time, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of any or all items of termination inventory not previously disposed of, exclusive of items the disposition of which has been directed or authorized by the Contracting Officer, and may request the Government to remove such items or enter into a storage agreement covering them. Not later than fifteen (15) days thereafter, the Government will accept title to such items and remove them or enter into a storage agreement covering the same; provided, that the list submitted shall be subject to verification by the Contracting Officer upon removal of the items, or if the items are stored, within forty-five (45) days from the date of submission of the list, and any necessary adjustment to correct the list as submitted shall be made prior to final settlement.

(c) After receipt of a Notice of Termination, the Contractor shall submit to the Contracting Officer his termination claim, in the form and with certification prescribed by the Contracting Officer. Such claim shall be submitted promptly but in no event later than one year from the effective date of termination, unless one or more extensions in writing are granted by the Contracting Officer, upon request of the Contractor made in writing within such one year period or authorized extension thereof. However, if the Contracting Officer determines that the facts justify such action, he may receive and act upon any such termination claim at any time after such one year period or any extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Contracting Officer may determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

(d) Subject to the provisions of paragraph (c), the Contractor and the Contracting Officer may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this clause, which amount or amounts may include a reasonable allowance for profit on work done; provided, that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. The contract shall be amended accordingly, and the Contractor shall be paid the agreed amount. Nothing in paragraph (e) of this clause, prescribing the amount to be paid to the Contractor in the event of failure of the Contractor and the Contracting Officer to agree upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the Contractor pursuant to this paragraph (d).

(e) In the event of the failure of the Contractor and the Contracting Officer to agree, as provided in paragraph (d), upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, the Contracting Officer shall pay to the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed upon in accordance with paragraph (d):

(i) with respect to all contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of:

(A) the cost of such work;

(B) the cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in paragraph (b)(v) above, exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the Notice of Termination of Work under this contract, which amounts shall be included in the cost on account of which payment is made under (A) above; and

(C) a sum, as profit on (A) above, determined by the Contracting Officer pursuant to 8-303 of the Defense Acquisition Regulation, in effect as of the date of execution of this contract, to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, no profit shall be included or allowed under this subdivision (C) and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss; and

(ii) the reasonable cost of the preservation and protection of property incurred pursuant to paragraph (b)(ix); and any other reasonable cost incidental to termination of work under this contract, including expense incidental to the determination of the amount due to the Contractor as the result of the termination of work under this contract. The total sum to be paid to the Contractor under (i) above shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. Except for normal spoilage, and except to the extent that the Government shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor under (i) above, the fair value, as determined by the Contracting Officer, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government, or to a buyer pursuant to paragraph (b)(vii).

(f) Costs claimed, agreed to, or determined pursuant to (c), (d), (e), and (i) hereof shall be in accordance with Section XV of the Defense Acquisition Regulation as in effect on the date of this contract.

(g) The Contractor shall have the right of appeal, under the clause of this contract entitled "Disputes", from any determination made by the Contracting Officer under paragraph (c), (e), or (i) hereof, except that if the Contractor has failed to submit his claim within the time provided in paragraph (c) or (i) hereof, and has failed to request extension of such time,

he shall have no such right of appeal. In any case where the Contracting Officer has made a determination of the amount due under paragraph (c), (e) or (i) hereof, the Government shall pay to the Contractor the following: (i) if there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by the Contracting Officer, or (ii) if an appeal has been taken, the amount finally determined on such appeal.

(h) In arriving at the amount due the Contractor under this clause there shall be deducted (i) all unliquidated advance or other payments on account theretofore made to the Contractor, applicable to the terminated portion of this contract, (ii) any claim which the Government may have against the Contractor in connection with this contract, and (iii) the agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the Contractor or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the Government.

(i) If the termination hereunder be partial, the Contractor may file with the Contracting Officer a claim for an equitable adjustment of the price or prices specified in the contract relating to the continued portion of the contract (the portion not terminated by the Notice of Termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices. Any claim by the Contractor for an equitable adjustment under this clause must be asserted within ninety (90) days from the effective date of the termination notice, unless an extension is granted in writing by the Contracting Officer.

(j) The Government may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs incurred by the Contractor in connection with the terminated portion of this contract whenever in the opinion of the Contracting Officer the aggregate of such payments shall be within the amount to which the Contractor will be entitled hereunder. If the total of such payments is in excess of the amount finally agreed or determined to be due under this clause, such excess shall be payable by the Contractor to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97 for the Renegotiation Board, for the period from the date such excess payment is received by the Contractor to the date on which such excess is repaid to the Government; provided, however, that no interest shall be charged with respect to any such excess payment attributable to a reduction in the Contractor's claim by reason of retention or other disposition of termination inventory until ten days after the date of such retention or disposition, or such later date as determined by the Contracting Officer by reason of the circumstances.

(k) Unless otherwise provided for in this contract, or by applicable statute, the Contractor shall - from the effective date of termination until the expiration of three years after final settlement under this contract - preserve and make available to the Government at all reasonable times at the office of the Contractor but without direct charge to the Government, all his books, records, documents and other evidence bearing on the costs and expenses of the Contractor under this contract and relating to the work terminated hereunder, or, to the extent approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions thereof. (DAR 7-602.29(a))

#### 19. PRICING OF ADJUSTMENTS (1970 JUL)

When costs are a factor in any determination of a contract price adjustment pursuant to the "Changes" clause or any other provision of this contract, such costs shall be in accordance with Section XV of the Defense Acquisition Regulation as in effect on the date of this contract. (DAR 7-103.26)

20. PATENT INDEMNITY (1964 JUN)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any Letters Patent of the United States (except Letters Patent issued upon an application which is now or may hereafter be, for reasons of national security, ordered by the Government to be kept secret or otherwise withheld from issue) arising out of the performance of this contract or out of the use or disposal by or for the account of the Government of supplies furnished or construction work performed hereunder. (DAR 7-602.16(a))

21. ADDITIONAL BOND SECURITY (1976 OCT)

If any surety upon any bond furnished in connection with this contract becomes unacceptable to the Government, or if any such surety fails to furnish reports as to his financial condition from time to time as requested by the Government, or if the contract price is increased to such an extent that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer, the Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the Government and of persons supplying labor or materials in the prosecution of the work contemplated by this contract. (DAR 7-602.17)

22. EXAMINATION OF RECORDS BY COMPTROLLER GENERAL (1975 JUN)

(a) This clause is applicable if the amount of this contract exceeds \$10,000 and was entered into by means of negotiation, including small business restricted advertising but is not applicable if this contract was entered into by means of formal advertising.

(b) The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract or such lesser time specified in either Appendix M of the Defense Acquisition Regulation or the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this contract.

(c) The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under the subcontract or such lesser time specified in either Appendix M of the Defense Acquisition Regulation or the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (i) purchase orders not exceeding \$10,000 and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(d) The periods of access and examination described in (b) and (c) above for records which relate to (i) appeals under the "Disputes" clause of this contract, (ii) litigation or the settlement of claims arising out of the performance of this contract, or (iii) costs and expenses of this contract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims or exceptions have been disposed of. (DAR 7-104.15)

23. BUY AMERICAN ACT (1966 OCT)

(a) Agreement. In accordance with the Buy American Act (41 U.S.C. 10a-10d), the Contractor agrees that only domestic construction material will be used (by the Contractor, subcontractors, materialmen, and suppliers) in the performance of this contract, except for nondomestic construction material listed in the "Nondomestic Construction Materials" clause, if any, of this contract.

(b) Domestic construction material. "Construction material" means any article, material, or supply brought to the construction site for incorporation in the building or work. An unmanufactured construction material is a "domestic construction material" if it has been mined or produced in the United States. A manufactured construction material is a "domestic construction material" if it has been manufactured in the United States and if the cost of its components which have been mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. "Component" means any article, material, or supply directly incorporated in a construction material.

(c) Domestic component. A component shall be considered to have been "mined, produced, or manufactured in the United States" (regardless of its source in fact) if the article, material, or supply in which it is incorporated was manufactured in the United States and the component is of a class or kind determined by the Government to be not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality. (DAR 7-602.20)

24. EQUAL OPPORTUNITY (1978 SEP)

(If, during any twelve (12) month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded Federal contracts and/or subcontracts which have an aggregate value in excess of \$10,000, the Contractor shall comply with (1) through (7) below. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.)

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the contractor's commitments under this Equal Opportunity clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and by the rules, regulations, and orders of the Secretary of Labor or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

(6) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States. (DAR 7-103.18(a))

#### 25. COVENANT AGAINST CONTINGENT FEES (1958 JAN)

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of such commissions, percentage, brokerage or contingent fee. (DAR 7-103.20)

#### 26. OFFICIALS NOT TO BENEFIT (1949 JUL)

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit. (DAR 7-103.19)

#### 27. CONVICT LABOR (1975 OCT)

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment

except as provided by Public Law 89-176, September 10, 1965 (18 U.S.C. 4082(c)(2)) and Executive Order 11755, December 29, 1973. (DAR 7-104.17)

28. UTILIZATION OF SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS CONCERNS (1979 JUL)

(a) It is the policy of the United States that small business and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in the performance of contracts let by any Federal agency.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this contract. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

(c) As used in this contract, the term "small business concern" shall mean a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto. The term "small business concern owned and controlled by socially and economically disadvantaged individuals," hereafter referred to as disadvantaged business, shall mean a small business concern -

(1) which is at least 51 per centum owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more socially and economically disadvantaged individuals; and

(2) whose management and daily business operations are controlled by one or more of such individuals. The Contractor shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans (such as American Indians, Eskimos, Aleuts and Native Hawaiians), and other minorities, or any other individuals found to be disadvantaged by the Administration pursuant to Section 8(a) of the Small Business Act.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as either a small business concern or a small business concern owned and controlled by socially and economically disadvantaged individuals. (DAR 7-104.14(a))

29. FEDERAL, STATE, AND LOCAL TAXES (1971 NOV)

(a) Except as may be otherwise provided in this contract, the contract price includes all applicable Federal, State, and local taxes and duties.

(b) Nevertheless, with respect to any Federal excise tax or duty on the transactions or property covered by this contract, if a statute, court decision, written ruling, or regulation takes effect after the contract date, and -

(1) results in the Contractor being required to pay or bear the burden of any such Federal excise tax or duty or increase in the rate thereof which would not otherwise have been payable on such transactions or property, the contract price shall be increased by the amount of such tax or duty or rate increase, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price as a contingency reserve or otherwise; or

(2) results in the Contractor not being required to pay or bear the burden of, or in his obtaining a refund or drawback of, any such Federal excise tax or duty which would otherwise have been payable on such transactions or property or which was the basis of an increase in the contract

price, the contract price shall be decreased by the amount of the relief, refund, or drawback, or that amount shall be paid to the Government, as directed by the Contracting Officer. The contract price shall be similarly decreased if the Contractor, through his fault or negligence or his failure to follow instructions of the Contracting Officer, is required to pay or bear the burden of, or does not obtain a refund or drawback of, any such Federal excise tax or duty.

(c) Paragraph (b) above shall not be applicable to social security taxes or to any other employment tax.

(d) No adjustment of less than \$100 shall be made in the contract price pursuant to paragraph (b) above.

(e) As used in paragraph (b) above, the term "contract date" means the date set for bid opening, or if this is a negotiated contract, the contract date. As to additional supplies or services procured by modification to this contract, the term "contract date" means the date of such modification.

(f) Unless there does not exist any reasonable basis to sustain an exemption, the Government upon the request of the Contractor shall, without further liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax; provided that, evidence appropriate to establish exemption from any Federal excise tax or duty which may give rise to either an increase or decrease in the contract price will be furnished only at the discretion of the Government.

(g) The Contractor shall promptly notify the Contracting Officer of matters which will result in either an increase or decrease in the contract price and shall take action with respect thereto as directed by the Contracting Officer. (DAR 7-103.10(a))

### 30. DAVIS-BACON ACT (40 U.S.C. 276a to a-7) (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Acts and to insert this clause in all subcontracts hereunder with private persons or firms)

(a) All mechanics and laborers, including apprentices and trainees, employed or working directly upon the site of the work shall be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Copeland Regulations (29 CFR, Part 3)), the full amounts due at time of payment computed at wage rates not less than the aggregate of the basic hourly rates and the rates of payments, contributions, or costs for any fringe benefits contained in the wage determination decision of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and such laborers and mechanics. A copy of such wage determination decision shall be kept posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers. The term mechanics and laborers shall be deemed to include apprentices and trainees not covered by an approved program as provided by the apprentice and trainee clause of the contract.

(b) The Contractor may discharge his obligation under this clause to workers in any classification for which the wage determination decision contains:

(1) Only a basic hourly rate of pay, by making payment at not less than such basic hourly rate, except as otherwise provided in the Copeland Regulations (29 CFR, Part 3); or

(2) Both a basic hourly rate of pay and fringe benefits payments, by making payment in cash, by irrevocably making contributions pursuant to a fund, plan, or program for, and or by assuming an enforceable commitment to bear the cost of, bona fide fringe benefits contemplated by the Davis-Bacon Act, or by any combination thereof. Contributions made, or costs assumed, on other than a weekly basis shall be considered as having been constructively made or assumed during a weekly period to the extent that they apply to such period. Where a fringe benefit is expressed in a wage determination in any manner other than as an hourly rate and the Contractor pays a cash equivalent or provides an alternative fringe benefit, he shall furnish information with his payrolls showing how he determined that the cost incurred to make the cash payment or to provide the alternative fringe benefit is equal to the cost of the wage determination fringe benefit. In any case where the Contractor provides a fringe benefit different from any contained in the wage determination, he shall similarly show how he arrived at the hourly rate shown therefor. In the event of disagreement between or among the interested parties as to an equivalent of any fringe benefit, the Contracting Officer shall submit the question, together with his recommendation, to the Secretary of Labor for final determination.

(c) The assumption of an enforceable commitment to bear the cost of fringe benefits, or the provision of any fringe benefits not expressly listed in section 1(b)(2) of the Davis-Bacon Act or in the wage determination decision forming a part of the contract, may be considered as payment of wages only with the approval of the Secretary of Labor pursuant to a written request by the Contractor. The Secretary of Labor may require the Contractor to set aside assets, in a separate account, to meet his obligations under any unfunded plan or program.

(d) The Contracting Officer shall require that any class of laborers or mechanics, including apprentices and trainees, which is not listed in the wage determination decision and which is to be employed under the contract shall be classified or reclassified conformably to the wage determination decision, and shall report the action taken to the Secretary of Labor. If the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers or mechanics, including apprentices and trainees, to be used, the Contracting Officer shall submit the question, together with his recommendation, to the Secretary of Labor for final determination.

(e) In the event it is found by the Contracting Officer that any laborer or mechanic, including all apprentices and trainees, employed by the Contractor or any subcontractor directly on the site of the work covered by this contract has been or is being paid at a rate of wages less than the rate of wages required by paragraph (a) of this clause, or by the "Apprentices and Trainees" clause of this contract, the Contracting Officer may (i) by written notice to the Government Prime Contractor terminate his right to proceed with the work, or such part of the work as to which there has been a failure to pay said required wages, and (ii) prosecute the work to completion by contract or otherwise, whereupon such Contractor and his sureties shall be liable to the Government for any excess costs occasioned the Government thereby.

(f) Paragraphs (a) through (e) of the clause shall apply to this contract to the extent that it is (i) a prime contract with the Government subject to the Davis-Bacon Act or (ii) a subcontract also subject to the Davis-Bacon Act under such prime contract. (DAR 7-602.23(a)(i))

31. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION (40 U.S.C. 327-333) (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours

Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

This contract is subject to the Contract Work Hours and Safety Standards Act and to the applicable rules, regulations, and interpretations of the Secretary of Labor.

(a) The Contractor shall not require or permit any laborer or mechanic, including apprentices, trainees, watchmen, and guards in any workweek in which he is employed on any work under this contract to work in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such workweek on work subject to the provisions of the Contract Work Hours and Safety Standards Act unless such laborer or mechanic, including apprentices, trainees, watchmen, and guards, receives compensation at a rate not less than one and one-half times his basic rate of pay for all such hours worked in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such workweek, whichever is the greater number of overtime hours. The "basic rate of pay," as used in this clause, shall be the amount paid per hour, exclusive of the Contractor's contribution or cost for fringe benefits and any cash payment made in lieu of providing fringe benefits, or the basic hourly rate contained in the wage determination, whichever is greater.

(b) In the event of any violation of the provisions of paragraph (a), the Contractor shall be liable to any affected employee for any amounts due, and to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including an apprentice, trainee, watchman, or guard, employed in violation of the provisions of paragraph (a) in the sum of \$10 for each calendar day on which such employee was required or permitted to be employed on such work in excess of eight (8) hours or in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by paragraph (a). (DAR 7-602.23(a)(ii))

### 32. APPRENTICES AND TRAINEES (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

(a) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau, or if a person is employed in his first ninety (90) days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a state apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen in any craft classification employed on this contract shall not be greater than the ratio permitted to the Contractor as to his entire work force under the register program. Any employee listed on a payroll at an apprentice wage rate, who is not a trainee as defined in paragraph (b) of this clause or is not registered or otherwise employed as stated above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor or subcontractor shall furnish to the Contracting Officer written evidence of the registration of his program and apprentices as well as the appropriate ratios and wage rates (expressed in percentages of the

journeyman hourly rates), for the area of construction prior to using apprentices on the contract work. The wage rate paid apprentices shall be not less than the appropriate percentage of the journeyman's rate contained in the applicable wage determination.

(b) Trainees will be permitted to work at less than the predetermined rate for the work performed when they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification, by the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training. The ratio of trainees to journeymen on this contract shall not be greater than permitted under the plan approved by the Bureau of Apprenticeship and Training. Every trainee must be paid at not less than the rate specified in the approved program for his level of progress. Any employee listed on the payroll at a trainee rate who is not registered and not participating in a training plan approved by the Bureau of Apprenticeship and Training shall be paid not less than the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor or subcontractor shall furnish the Contracting Officer written evidence of the certification of his program, the registration of the trainee, and the ratios and wage rates prescribed in that program. In the event the Bureau of Apprenticeship and Training withdraws the approval of a training program, the Contractor shall no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of this contract. (DAR 7-602.23(a)(iii))

### 33. PAYROLLS AND BASIC RECORDS (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

(a) The Contractor shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of three (3) years thereafter for all laborers and mechanics, including apprentices, trainees, watchmen, and guards, working at the site of the work. Such records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributions for, or costs assumed to provide, fringe benefits), daily and weekly number of hours worked, deductions made and actual wages paid. (NOTE: Watchmen and guards are reflected on payroll records for Contract Work Hours and Safety Standards Act purposes only.) Whenever the Contractor has obtained approval from the Secretary of Labor as provided in paragraph (c) of the clause entitled "Davis-Bacon Act," he shall maintain records which show the commitment, its approval, written communication of the plan or program to the laborers or mechanics affected, and the costs anticipated or incurred under the plan or program.

(b) The Contractor shall submit weekly a copy of all payrolls to the Contracting Officer. The Government Prime Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. The copy shall be accompanied by a statement signed by the Contractor indicating that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor, and that the classifications set forth for each laborer or mechanic, including apprentices and trainees, conform with the work he performed. Weekly submission of the

"Statement of Compliance" required under this contract and the Copeland Regulations of the Secretary of Labor (29 CFR, Part 3) shall satisfy the requirement for submission of the above statement. The Contractor shall submit also a copy of any approval by the Secretary of Labor with respect to fringe benefits which is required by paragraph (c) of the clause entitled "Davis-Bacon Act."

(c) The Contractor shall make the records required under this clause available for inspection by authorized representatives of the Contracting Officer and the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. (DAR 7-602.23(a)(iv))

#### 34. COMPLIANCE WITH COPELAND REGULATIONS (1964 JUN)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

The Contractor shall comply with the Copeland Regulations of the Secretary of Labor (29 CFR, Part 3) which are incorporated herein by reference. (DAR 7-602.23(a)(v))

#### 35. WITHHOLDING OF FUNDS (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

(a) The Contracting Officer may withhold or cause to be withheld from the Government Prime Contractor so much of the accrued payments or advances as may be considered necessary (i) to pay laborers and mechanics, including apprentices, trainees, watchmen, and guards, employed by the Contractor or any subcontractor on the work the full amount of wages required by the contract, and (ii) to satisfy any liability of the Contractor and any subcontractor for liquidated damages under paragraph (b) of the clause entitled "Contract Work Hours and Safety Standards Act-Overtime Compensation."

(b) If the Contractor or any subcontractor fails to pay any laborer, mechanic, apprentice, trainee, watchman, or guard employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Government Prime Contractor, take such action as may be necessary to cause suspension of any further payments or advances until such violations have ceased. (DAR 7-602.23(a)(vi))

#### 36. SUBCONTRACTS (1972 FEB)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

The Contractor agrees to insert the clauses hereof entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act-Overtime Compensation," "Apprentices and Trainees," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," and "Contract Termination-Debarment" in all subcontracts. The term "Contractor" as used in such clauses in any subcontract shall be deemed to refer to the subcontractor except in the phrase "Government Prime Contractor." (DAR 7-602.23(a)(vii))

37. CONTRACT TERMINATION - DEBARMENT (1972 APR)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

A breach of the clauses hereof entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act-Overtime Compensation," "Apprentices and Trainees," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," and "Subcontracts" may be grounds for termination of the contract, and for debarment as provided in 29 CFR 5.6. (DAR 7-602.23(a)(viii))

38. DISPUTES CONCERNING LABOR STANDARDS (1977 DEC)

(If this contract is with a State or political subdivision thereof, the Contractor agrees to comply with the requirements of the Contract Work Hours Standards Act and to insert this clause in all subcontracts hereunder with private persons or firms)

Disputes arising out of the labor standards provisions of this contract shall be subject to the Disputes clause except to the extent such disputes involve the meaning of classifications or wage rates contained in the wage determination decision of the Secretary of Labor or the applicability of the labor provisions of this contract which questions shall be referred to the Secretary of Labor in accordance with the procedures of the Department of Labor. (DAR 7-602.23(a)(ix))

39. CONTRACTOR INSPECTION SYSTEM (1964 NOV)

The Contractor shall (i) maintain an adequate inspection system and perform such inspections as will assure that the work performed under the contract conforms to contract requirements, and (ii) maintain and make available to the Government adequate records of such inspections. (DAR 7-602.10(a))

40. GRATUITIES (1952 MAR)

(a) The Government may, by written notice to the Contractor, terminate the right of the Contractor to proceed under this contract if it is found, after notice and hearing, by the Secretary or his duly authorized representative, that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the Government with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such contract; provided, that the existence of the facts upon which the Secretary or his duly authorized representative makes such findings shall be in issue and may be reviewed in any competent court.

(b) In the event this contract is terminated as provided in paragraph (a) hereof, the Government shall be entitled (i) to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the contract by the Contractor, and (ii) as a penalty in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the Secretary or his duly authorized representative) which shall be not less than three nor more than ten times the costs incurred by the Contractor in providing any such gratuities to any such officer or employee.

(c) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract. (DAR 7-104.16)

41. SUBCONTRACTING PLAN FOR SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS CONCERNS (FORMALLY ADVERTISED) (1979 JUL)

(The following clause is applicable if this contract (1) offers subcontracting possibilities, (2) is expected to exceed \$500,000, or \$1,000,000 in the case of construction of any public facility and (3) is required to include the clause in DAR 7-104.14(a))

(a) The apparent low bidder, upon request by the contracting officer, shall submit a subcontracting plan which addresses separately subcontracting with small business concerns and small disadvantaged business concerns, and which shall be included in and made a material part of the resultant contract. The subcontracting plan shall be submitted within the time specified by the contracting officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

As a minimum, the subcontracting plan shall include:

(1) Separate percentage goals (expressed in terms of percentage of total planned subcontracting dollars) for the utilization as subcontractors of small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals; for the purposes of the subcontracting plan, the Contractor shall include all first tier subcontracts to be awarded in performance of this contract, including a proportionate share of products, services, etc., whose costs are normally allocated as indirect or overhead costs when reasonably determined to be attributable to this contract.

(2) The name of an individual within the employ of the bidder who will administer the subcontracting plan of the bidder and a description of the duties of such individual;

(3) A description of the efforts the bidder will make to assure that small business and small disadvantaged business concerns will have an equitable opportunity to compete for subcontracts;

(4) Assurances that the bidder will include the clause entitled "Utilization of Small Business and Small Disadvantaged Business Concerns" in all subcontracts which offer further subcontracting opportunities, and that the bidder will require all subcontractors (except small business concerns) who receive subcontracts in excess of \$1,000,000 in the case of a contract for the construction of any public facility, or in excess of \$500,000 in the case of all other contracts, to adopt a plan in consonance with this clause;

(5) Assurances that the bidder will submit such periodic reports and cooperate in any studies or surveys as may be required by the contracting agency or the Small Business Administration in order to determine the extent of compliance by the bidder with the subcontracting plan; and

(6) A recitation of the types of records the successful bidder will maintain to demonstrate procedures which have been adopted to comply with the requirements and goals set forth in the plan, including the establishment of source lists of small business concerns and small disadvantaged business concerns; and efforts to identify and award subcontracts to such small business concerns.

(b) In order to effectively implement this plan, the Contractor shall:

(1) Issue and promulgate company wide policy statements in support of this effort, develop written procedures and work instructions, and assign specific responsibilities regarding the requirements of this clause.

(2) Demonstrate continuing management interest and involvement in support of these programs through such actions as regular reviews of progress and establishment of overall corporate and divisional goals and objectives.

(3) Train and motivate Contractor personnel in support of these programs.

(4) Assist small business and small disadvantaged business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business and disadvantaged subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(5) Provide adequate and timely consideration of the potentialities of small business and small disadvantaged business concerns in all "make-or-buy" decisions.

(6) Counsel and discuss subcontracting opportunities with representatives of small and disadvantaged business firms as are referred by the Small and Disadvantaged Business Utilization Specialist responsible for monitoring performance under this program and representatives of the SBA.

(c) The Contractor shall submit DD Form 1140-1 in accordance with instructions provided on the form.

(d) The bidder understands that:

(1) Prior compliance of the bidder with other such subcontracting plans under previous contracts will be considered by the contracting officer in determining the responsibility of the bidder for award of the contract.

(2) Subcontracting plans are not required of small business concerns.

(3) The failure of any Contractor or subcontractor to comply in good faith with (i) the clause entitled "Utilization of Small Business Concerns and Small Disadvantaged Business Concerns", or (ii) the terms of any subcontracting plan required by this Small Business and Small Disadvantaged Business Subcontracting Plan (Advertised) provision, will be a material breach of the contract or subcontract. (DAR 7-104.14(c))

#### 42. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (1965 JAN)

(The provisions of this clause shall be applicable only if the amount of this contract exceeds \$10,000.)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) This clause shall be included in all subcontracts. (DAR 7-103.23)

#### 43. AUTHORIZATION AND CONSENT (1964 MAR)

The Government hereby gives its authorization and consent (without prejudice to any rights of indemnification) for all use and manufacture, in the performance of this contract or any part hereof or any amendment hereto or any subcontract hereunder (including any lower-tier subcontract), of any invention described in and covered by a patent of the United States (i) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract, or (ii) utilized in the

machinery, tools, or methods the use of which necessarily results from compliance by the Contractor or the using subcontractor with (a) specifications or written provisions now or hereafter forming a part of this contract, or (b) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clauses, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted. (DAR 7-103.22)

#### 44. COMPOSITION OF CONTRACTOR (1965 JAN)

If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder. (DAR 7-602.32)

#### 45. SITE INVESTIGATION (1965 JAN)

The Contractor acknowledges that he has investigated and satisfied himself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from information presented by the drawings and specifications made a part of this contract. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Government. (DAR 7-602.33)

#### 46. PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS (1965 JAN)

(a) The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interfere with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any limbs or branches of trees broken during such operations or by the careless operation of equipment, or by workmen, shall be trimmed with a clean cut and painted with an approved tree pruning compound as directed by the Contracting Officer.

(b) The Contractor will protect from damage all existing improvements or utilities at or near the site of the work, the location of which is made known to him, and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. If the Contractor fails or refuses to repair any such damage promptly, the Contracting Officer may have the necessary work performed and charge the cost thereof to the Contractor. (DAR 7-602.34)

47. OPERATIONS AND STORAGE AREAS (1965 JAN)

(a) All operations of the Contractor (including storage of materials) upon Government premises shall be confined to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by his operations.

(b) Temporary buildings (storage sheds, shops, offices, etc.) may be erected by the Contractor only with the approval of the Contracting Officer, and shall be built with labor and materials furnished by the Contractor without expense to the Government. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the work. With the written consent of the Contracting Officer, such buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways or construct and use such temporary roadways as may be authorized by the Contracting Officer. Where materials are transported in the prosecution of the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State or local law or regulation. When it is necessary to cross curbs or sidewalks, protection against damage shall be provided by the Contractor and any damaged roads, curbs, or sidewalks shall be repaired by, or at the expense of the Contractor. (DAR 7-602.35)

48. MODIFICATION PROPOSALS - PRICE BREAKDOWN (1968 APR)

The Contractor, in connection with any proposal he makes for a contract modification, shall furnish a price breakdown, itemized as required by the Contracting Officer. Unless otherwise directed, the breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract, and overhead costs, as well as profit, and shall cover all work involved in the modification, whether such work was deleted, added or changed. Any amount claimed for subcontracts shall be supported by a similar price breakdown. In addition, if the proposal includes a time extension, a justification therefor shall also be furnished. The proposal, together with the price breakdown and time extension justification, shall be furnished by the date specified by the Contracting Officer. (DAR 7-602.36)

49. SUBCONTRACTORS (1979 MAR)

(In construction contracts to be performed in United States possessions (as defined in DAR 18-703.2) and in Puerto Rico, the second sentence is modified to refer only to the clauses required by DAR 18-703.2)

Within seven days after the award of any subcontract either by himself or a subcontractor, the Contractor shall deliver to the Contracting Officer a completed DD Form 1566. The form shall include the subcontractor's acknowledgement of the inclusion in his subcontract of the clauses of this contract entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act-Overtime Compensation," "Apprentices and Trainees," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," "Contract Termination-Debarment," and "Payrolls and Basic Records." Nothing contained in this contract shall create any contractual relation between the subcontractor and the Government. (DAR 7-602.37)

50. CLEANING UP (1965 JAN)

The Contractor shall at all times keep the construction area, including storage areas used by him, free from accumulations of waste material or

rubbish and prior to completion of the work remove any rubbish from the premises and all tools, scaffolding, equipment, and materials not the property of the Government. Upon completion of the construction the Contractor shall leave the work and premises in a clean, neat and workmanlike condition satisfactory to the Contracting Officer. (DAR 7-602.40)

#### 51. ADDITIONAL DEFINITIONS (1965 JAN)

(a) Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the "direction," "requirement," "ordered," "designation," or "prescription," of the Contracting Officer is intended and similarly the words "approved," "acceptable," "satisfactory" or words of like import shall mean "approved by" or "acceptable to," or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(b) Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provided complete in place," that is "furnished and installed." (DAR 7-602.41)

#### 52. ACCIDENT PREVENTION (1977 JUN)

(a) In order to provide safety controls for protection to the life and health of employees and other persons; for prevention of damage to property, materials, supplies, and equipment; and for avoidance of work interruptions in the performance of this contract, the Contractor shall comply with all pertinent provisions of Corps of Engineers Manual, EM 385-1-1, dated 1 June 1977, entitled "General Safety Requirements", as amended, and will also take or cause to be taken such additional measures as the Contracting Officer may determine to be reasonably necessary for the purpose.

(b) The Contractor will maintain an accurate record of, and will report to the Contracting Officer in the manner and on the forms prescribed by the Contracting Officer, exposure data and all accidents resulting in death, traumatic injury, occupational disease, and damage to property, materials, supplies and equipment incident to work performed under this contract.

(c) The Contracting Officer will notify the Contractor of any noncompliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his representative at the site of the work, shall be deemed sufficient for the purpose. 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 any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

(d) Compliance with the provisions of this clause by subcontractors will be the responsibility of the Contractor.

(e) Prior to commencement of the work the Contractor will:

- (1) submit in writing his proposals for effectuating this provision for accident prevention;
- (2) meet in conference with representatives of the Contracting Officer to discuss and develop mutual understandings relative to administration of the over-all safety program. (DAR 7-602.42(a) & (b))

53. GOVERNMENT INSPECTORS (1965 JAN)

The work will be conducted under the general direction of the Contracting Officer and is subject to inspection by his appointed inspectors to insure strict compliance with the terms of the contract. No inspector is authorized to change any provision of the specifications without written authorization of the Contracting Officer, nor shall the presence or absence of an inspector relieve the Contractor from any requirements of the contract. (DAR 7-602.43)

54. RIGHTS IN SHOP DRAWINGS (1966 APR)

(Applicable to all contracts calling for the delivery of shop drawings)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier. (DAR 7-602.47)

55. AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (1976 JUL)

(This clause is applicable pursuant to 41 C.F.R. 60-250, if this contract is for \$10,000 or more.)

(a) The Contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans status in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(b) The Contractor agrees that all suitable employment openings of the Contractor which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment of the Contractor other than the one wherein the contract is being performed but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The Contractor further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service, but are not required to provide those reports set forth in paragraphs (d) and (e).

(c) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein

is intended to relieve the Contractor from any requirements in Executive Orders or regulations regarding nondiscrimination in employment.

(d) The reports required by paragraph (b) of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office or, where the Contractor has more than one hiring location in a State, with the central office of that State employment service. Such reports shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of nondisabled veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 U.S.C. 1787. The Contractor shall submit a report within 30 days after the end of each reporting period wherein any performance is made on this contract identifying data for each hiring location. The Contractor shall maintain at each hiring location copies of the reports submitted until the expiration of one year after final payment under the contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the Contracting Officer or of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment and placement.

(e) Whenever the Contractor becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these provisions and has so advised the State system, there is no need to advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(f) This clause does not apply to the listing of employment openings which occur and are filled outside of the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

(g) The provisions of paragraphs (b), (c), (d) and (e) of this clause do not apply to openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of his own organization or employer-union arrangement for that opening.

(h) As used in this clause:

(1) "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: production and nonproduction; plant and office; laborers and mechanics; supervisory and nonsupervisory; technical; and executive, administrative, and professional openings as are compensated on a salary basis of less than \$25,000 per year. This term includes full-time employment, temporary employment of more than three (3) days duration, and part-time employment. It does not include openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement nor openings in an educational institution which are restricted to students of that institution. Under the most compelling circumstances an employment opening may not be suitable for listing, including such situations where the needs of the Government cannot reasonably be otherwise supplied, where listing would be contrary to national security, or where the requirement of listing would otherwise not be for the best interest of the Government.

(2) "Appropriate office of the State employment service system" means the local office of the Federal-State national system of public employment offices with assigned responsibility for serving the area where the employment opening is to be filled, including the District of Columbia, Guam, Puerto Rico, and the Virgin Islands.

(3) "Openings which the Contractor proposes to fill from within his own organization" means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and the parent companies) and includes any openings which the Contractor proposes to fill from regularly established "recall" lists.

(4) "Openings which the Contractor proposes to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings which the Contractor proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between the Contractor and representatives of his employees.

(i) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Vietnam Era Veterans' Readjustment Assistance Act, hereinafter referred to as the "Act" (38 U.S.C. 2012).

(j) In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(k) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, Office of Federal Contract Compliance Programs, provided by or through the Contracting Officer. Such notice shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.

(l) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era.

(m) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance. (DAR 7-103.27)

#### 56. VALUE ENGINEERING INCENTIVE (1977 AUG)

(The following clause is applicable if this contract is in excess of \$100,000)

(a) Application. This clause applies to a Contractor developed and documented Value Engineering Change Proposal (VECP) which:

- (i) requires a change to this contract to implement the VECP; and
- (ii) reduces the contract price without impairing essential function or characteristics, provided that it is not based solely on a change in deliverable end item quantities.

(b) Documentation. As a minimum, the following information shall be submitted by the contractor with each VECP:

- (i) a description of the difference between the existing contract requirement and the proposed change, and the comparative advantages and disadvantages of each; justification where function or characteristics of a work item is being altered; and the effect of the change on the performance of the end item;
- (ii) an analysis and itemization of the requirements of the contract which must be changed if the VECP is accepted and a recommendation as to how to make each such change (e.g., a suggested specification revision);
- (iii) a separate detailed cost estimate for both the existing contract requirement and the proposed change to provide an estimate of the reduction in costs, if any, that will result from acceptance of the VECP, taking into account the costs of development and implementation by the Contractor (including any amount attributable to subcontracts in accordance with paragraph (f) below);
- (iv) a prediction of any effects the proposed change would have on related costs to the Military Department such as Government furnished property costs, and costs of maintenance and operation;
- (v) a statement of the time by which a change order adopting the VECP must be issued so as to obtain the maximum cost reduction during the remainder of this contract, noting any effect on the contract completion time or delivery schedule; and
- (vi) identification of any previous submission of the VECP, including the dates submitted, the agencies involved, the numbers of the Government contracts involved, and the previous actions by the Government, if known.

(c) Submission. To expedite a determination, VECPs shall be submitted to the Resident Engineer at the worksite with a copy to the Contracting Officer. Proposals shall be processed expeditiously; however, the Government shall not be liable for any delay in acting upon any proposal submitted pursuant to this clause. If the evaluation period is likely to exceed 45 calendar days, the PCO shall promptly notify the Contractor of the estimated decision date and provide the reasons for the additional time required. The Contractor has the right to withdraw, in whole or in part, any VECP not accepted by the Government within the period specified in the VECP.

(d) Acceptance. The Contracting Officer may accept, in whole or in part, by contract modification any VECP submitted pursuant to this clause. The Contracting Officer may accept the VECP even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall remain obligated to perform in accordance with this contract. Contract modifications made pursuant to this clause will so state. The decision of the Contracting Officer as to the acceptance of any VECP under this contract shall be final and shall not be subject to the "Disputes" clause of this contract.

(e) Sharing. If a VECP submitted by the Contractor pursuant to this clause is accepted, the contract price shall be adjusted without regard to profit in accordance with the following provisions:

- (i) Definition:

(A) Instant contract savings to the Contractor (ICS) are the estimated reduction in the Contractor's cost of performance resulting from the acceptance of the VECP. The proposed cost reduction includes estimated allowable Contractor development and implementation costs (CC). The Contractor's development and implementation costs include any subcontractor development and implementation costs (see (f) below). For purposes of this clause, Contractor development costs are those costs incurred after the Contractor has identified a specific VE project and prior to acceptance and implementation by the Government.

(B) Government Costs (GC) are those DOD costs which directly result from development and implementation of the VECP, such as test and evaluation of the VECP.

(ii) Calculations and Actions.

Multiply ICS by 45% and GC by 55%.

Add these two results, e.g., (.45 ICS + .55 GC) and subtract from the contract price

(f) Subcontracts. The Contractor shall include appropriate VE arrangements in any subcontract of \$50,000 or greater, and may include such arrangements in contracts of lesser value. To compute any adjustment in the contract price under paragraph (e) above, the Contractor's cost of development and implementation of a VECP which is accepted under this contract shall include any development and implementation costs of a subcontractor which clearly pertains to such VECP, but shall exclude any VE incentive payments which the Contractor may make to a subcontractor. The Contractor may make whatever VE incentive payment arrangements he chooses with his subcontractors, provided that any payments to subcontractors under such arrangements are made from Contractor's, and not the Government's, share of the savings resulting from the VECP.

(g) Data. The Contractor may restrict the Government's right to use any sheet of a VECP or of the supporting data, submitted pursuant to this clause, in accordance with the terms of the following legend if it is marked on such sheet:

"This data furnished pursuant to the Value Engineering Incentive clause of contract \_\_\_\_\_ shall not be disclosed outside the Government, or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a VECP submitted under said clause. This restriction does not limit the Government's right to use information contained in this data if it is or has been obtained, or is otherwise available, from the Contractor or from another source, without limitations."

In the event of acceptance of the VECP, the Contractor hereby grants to the Government unlimited rights, as defined in the clause of DAR 7-104.9(a), in the VECP and supporting data, except that, with respect to data which qualifies as and is submitted as limited rights technical data in accordance with the clause of DAR 7-104.9(a), the Government shall have the rights specified in the contract modification referred to in paragraph (d) hereof and the data shall be appropriately marked. (DAR 7-602.50))

**57. AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS (1976 MAY)**

(Contracts and subcontracts are exempt from the requirements of the following clause with regard to work performed outside the United States by employees who were not recruited within the United States.)

(a) The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(b) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(c) In the event of the Contractor's noncompliance with the requirements of this clause, action for noncompliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(d) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the Contracting Officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.

(e) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.

(f) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance. (DAR 7-103.28)

#### 58. CLEAN AIR AND WATER (1975 OCT)

(Applicable only if the contract exceeds \$100,000, or the contracting officer has determined that orders under an indefinite quantity contract in any one year will exceed \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857c-8(c)(1) or the Federal Water Pollution Control Act (33 U.S.C. 1319(c)) and is listed by EPA, or the contract is not otherwise exempt.)

(a) The Contractor agrees as follows:

(i) To comply with all the requirements of section 114 of the Clean Air Act, as amended (42 U.S.C. 1857, et seq., as amended by Public Law 91-604) and section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251, as amended by Public Law 92-500), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, respectively, and all regulations and guidelines issued thereunder before the award of this contract;

(ii) That no portion of the work required by this prime contract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date this contract was awarded unless and

until the EPA eliminates the name of such facility or facilities from such listing;

(iii) To use his best efforts to comply with clean air standards and clean water standards at the facilities in which the contract is being performed; and

(iv) To insert the substance of the provisions of this clause in any nonexempt subcontract, including this paragraph (iv).

(b) The terms used in this clause have the following meanings.

(i) The term "Air Act" means the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Public Law 91-604).

(ii) The term "Water Act" means Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Public Law 92-500).

(iii) The term "clean air standards" means any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, or other requirements which are contained in, issued under, or otherwise adopted pursuant to the Air Act or Executive Order 11738, an applicable implementation plan as described in section 110(d) of the Clean Air Act (42 U.S.C. 1857c-5(d), an approved implementation procedure or plan under section 111(c) or section 111(d), respectively, of the Air Act (42 U.S.C. 1857c-6(c) or (d)), or an approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 1857c-7(d)).

(iv) The term "clean water standards" means any enforceable limitation, control, condition, prohibition, standard or other requirement which is promulgated pursuant to the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program, as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by a local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317)

(v) The term "compliance" means compliance with clean air or water standards. Compliance shall also mean compliance with a schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency or an air or water pollution control agency in accordance with the requirement of the Air Act or Water Act and regulations issued pursuant thereto.

(vi) The term "facility" means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a contractor, subcontractor, to be utilized in the performance of a contract or subcontract. Where a location or site of operations contains or includes more than one building, plant, installation, or structure, the entire location or site shall be deemed to be a facility except where the Director, Office of Federal Activities, Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.

(vii) The term "nonexempt contract or subcontract" means a contract or subcontract of more than \$100,000 which is not otherwise exempted pursuant to the EPA regulations implementing the Air Act and Water Act (40 CFR 15.5), as further implemented in DAR 1-2302.4 or in FPR 1-1.2302-4 (whichever is applicable) and the procedures of the Department awarding the contract. (DAR 7-103.29)

#### 59. NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (1958 SEP)

(a) Whenever the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice thereof, including all relevant information with respect thereto, to the Contracting Officer.

(b) The Contractor agrees to insert the substance of this clause, including this paragraph (b), in any subcontract hereunder as to which a labor dispute may delay the timely performance of this contract; except that each such subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify his next higher tier subcontractor, or the prime contractor, as the case may be, of all relevant information with respect to such dispute. (DAR 7-104.4)

60. CONTRACT PRICES - BIDDING SCHEDULE (1968 APR)

(The following clause is applicable to contracts containing unit prices)

Payment for the various items listed in the Bidding Schedule shall constitute full compensation for furnishing all plant, labor, equipment, appliances, and materials, and for performing all operations required to complete the work in conformity with the drawings and specifications. All costs for work not specifically mentioned in the Bidding Schedule shall be included in the contract prices for the items listed. (DAR 7-603.5)

61. PRIORITIES, ALLOCATIONS, AND ALLOTMENTS (1975 OCT)

(The following clause is applicable to rateable contracts)

The Contractor shall follow the provisions of DMS Reg. 1 or DPS Reg. 1 and all other applicable regulations and orders of the Bureau of Domestic Commerce in obtaining controlled materials and other products and materials needed to fill this order. (DAR 7-104.18)

62. PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - PRICE ADJUSTMENT (1970 JAN)

(The following clause is applicable if this contract is in excess of \$100,000)

(a) This clause shall become operative only with respect to any modification of this contract which involves aggregate increases and/or decreases in costs plus applicable profits in excess of \$100,000 unless the modification is priced on the basis of adequate competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. The right to price reduction under this clause is limited to defects in data relating to such modification.

(b) If any price, including profit, or fee, negotiated in connection with any price adjustment under this contract was increased by any significant sums because:

- (i) the Contractor furnished cost or pricing data which was not complete, accurate and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;
- (ii) a subcontractor, pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data" or "Subcontractor Cost or Pricing Data - Price Adjustments" or any subcontract clause therein required, furnished cost or pricing data which was not complete, accurate and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;
- (iii) a subcontractor or prospective subcontractor furnished cost or pricing data which was required to be complete, accurate and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not complete, accurate and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(iv) the Contractor or a subcontractor or prospective subcontractor furnished any data, not within (i), (ii) or (iii) above, which was not accurate, as submitted;

the price shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor, when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor, provided the actual subcontract price was not affected by defective cost or pricing data.

Note: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the contractor. However, the inclusion of such a clause and the terms thereof are matters for negotiation and agreement between the contractor and the subcontractor, provided that they are consistent with DAR 23-203 relating to Disputes provisions in subcontracts. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his lower tier subcontractors. (DAR 7-104.29(b))

#### 63. INTEREST (1972 MAY)

Notwithstanding any other provision of this contract, unless paid within thirty (30) days, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code) shall bear interest from the date due until paid and shall be subject to adjustments as provided by Part 6 of Appendix E of the Defense Acquisition Regulation, as in effect on the date of this contract. The interest rate per annum shall be the interest rate in effect which has been established by the Secretary of the Treasury pursuant to Public Law 92-41; 85 STAT 97 for the Renegotiation Board, as of the date the amount becomes due as herein provided. Amounts shall be due upon the earliest one of (i) the date fixed pursuant to this contract; (ii) the date of the first written demand for payment, consistent with this contract, including demand consequent upon default termination; (iii) the date of transmittal by the Government to the Contractor of a proposed supplemental agreement to confirm completed negotiations fixing the amount; or (iv) if this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or in connection with a negotiated pricing agreement not confirmed by contract supplement. (DAR 7-104.39)

#### 64. AUDIT BY DEPARTMENT OF DEFENSE (1978 AUG)

(The following clause is applicable unless this contract was entered into by formal advertising and is not in excess of \$100,000)

(a) General. The Contracting Officer or his representatives shall have the audit and inspection rights described in the applicable paragraphs (b), (c) and (d) below.

(b) Examination of Costs. If this is a cost reimbursement type, incentive, time and materials, labor hour, or price redeterminable contract, or any combination thereof, the Contractor shall maintain, and the Contracting Officer or his representatives shall have the right to examine books, records,

documents, and other evidence and accounting procedures and practices, sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of this contract. Such right of examination shall include inspection at all reasonable times of the Contractor's plants, or such parts thereof, as may be engaged in the performance of this contract.

(c) Cost or Pricing Data. If the Contractor submitted cost or pricing data in connection with the pricing of this contract or any change or modification thereto, unless such pricing was based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation, the Contracting Officer or his representatives who are employees of the United States Government shall have the right to examine all books, records, documents and other data of the Contractor related to the negotiation, pricing or performance of such contract, change or modification, for the purpose of evaluating the accuracy, completeness and currency of the cost or pricing data submitted. Additionally, in the case of pricing any change or modification exceeding \$100,000 to formally advertised contracts, the Comptroller General of the United States or his representatives who are employees of the United States Government shall have such rights. The right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

(d) Reports. If the Contractor is required to furnish Contractor Cost Data Reports (CCDR), Contract Fund Status Reports (CFSR), or Cost Performance Reports (CPR) the Contracting Officer or his representatives shall have the right to examine books, records, other documents, and supporting materials, for the purpose of evaluating (i) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports, and (ii) the data reported.

(e) Availability. The materials described in (b), (c) and (d) above shall be made available at the office of the Contractor, at all reasonable times, for inspection, audit, or reproduction, until the expiration of three years from the date of final payment under this contract or such lesser time specified in Appendix M of the Defense Acquisition Regulation, and for such longer period, if any, as is required by applicable statute, or by other clauses of this contract, or by (1) and (2) below:

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for a period of three years from the date of any resulting final settlement.

(2) Records which relate to appeals under the "Disputes" clause of this contract, or litigation or the settlement of claims arising out of the performance of this contract, shall be made available until such appeals, litigation, or claims have been disposed of.

(f) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (f), in all subcontracts exceeding \$10,000 hereunder, except altered as necessary for proper identification of the contracting parties and the Contracting Officer under the Government prime contract. (DAR 7-104.41(a))

#### 65. SUBCONTRACTOR COST OR PRICING DATA - PRICE ADJUSTMENTS (1970 JAN)

(The following clause is applicable if this contract is in excess of \$100,000)

(a) Paragraphs (b) and (c) of this clause shall become operative only with respect to any modification made pursuant to one or more provisions of

this contract which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000. The requirements of this clause shall be limited to such modifications.

(b) The Contractor shall require subcontractors hereunder to submit cost or pricing data under the following circumstances: (i) prior to the award of any subcontract the amount of which is expected to exceed \$100,000 when entered into; (ii) prior to the pricing of any subcontract modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000; except where the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

(c) The Contractor shall require subcontractors to certify that to the best of their knowledge and belief the cost and pricing data submitted under (b) above is accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.

(d) The Contractor shall insert the substance of this clause including this paragraph (d) in each subcontract which exceeds \$100,000. (DAR 7-104.42(b))

#### 66.1 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (1964 NOV)

(The following clause is applicable when Government Property having an acquisition cost of \$50,000 or less is furnished to or acquired by the Contractor)

(a) The Government shall deliver to the Contractor, for use only in connection with this contract, the property described in the schedule or specifications (hereinafter referred to as "Government-furnished property"), at the times and locations stated therein. If the Government-furnished property, suitable for its intended use, is not so delivered to the Contractor, the Contracting Officer shall, upon timely written request made by the Contractor, and if the facts warrant such action, equitably adjust any affected provision of this contract pursuant to the procedures of the "Changes" clause hereof.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall maintain adequate property control records of Government-furnished property in accordance with sound industrial practice.

(c) Unless otherwise provided in this contract, the Contractor, upon delivery to him of any Government-furnished property, assumes the risk of, and shall be responsible for, any loss thereof or damage thereto except for reasonable wear and tear, and except to the extent that such property is consumed in the performance of this contract.

(d) The Contractor shall, upon completion of this contract, prepare for shipment, deliver f.o.b. origin, or dispose of all Government-furnished property not consumed in the performance of this contract or not theretofore delivered to the Government, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or paid in such other manner as the Contracting Officer may direct. (DAR 7-104.24(f))

#### 66.2 GOVERNMENT PROPERTY (FIXED PRICE) (1968 SEP)

(The following clause is applicable when Government Property having an acquisition cost in excess of \$50,000 is furnished to or acquired by the Contractor)

(a) Government-Furnished Property. The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract,

the property described as Government-furnished property in the Schedule or specifications, together with such related data and information as the Contractor may request and as may reasonably be required for the intended use of such property (hereinafter referred to as "Government-furnished property"). The delivery or performance dates for the supplies or services to be furnished by the Contractor under this contract are based upon the expectation that Government-furnished property suitable for use (except for such property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet such delivery or performance dates. In the event that Government-furnished property is not delivered to the Contractor by such time or times, the Contracting Officer shall, upon timely written request made by the Contractor, make a determination of the delay, if any, occasioned the Contractor thereby, and shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision affected by any such delay, in accordance with the procedures provided for in the clause of this contract entitled "Changes." Except for Government-furnished property furnished "as is," in the event the Government-furnished property is received by the Contractor in a condition not suitable for the intended use the Contractor shall, upon receipt thereof, notify the Contracting Officer of such fact and, as directed by the Contracting Officer, either (i) return such property at the Government's expense or otherwise dispose of the property, or (ii) effect repairs or modifications. Upon the completion of (i) or (ii) above, the Contracting Officer upon written request of the Contractor shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision affected by the rejection or disposition, or the repair or modification, in accordance with the procedures provided for in the clause of this contract entitled "Changes." The foregoing provisions for adjustment are exclusive and the Government shall not be liable to suit for breach of contract by reason of any delay in delivery of Government-furnished property or delivery of such property in a condition not suitable for its intended use.

(b) Changes in Government-furnished Property.

- (1) By notice in writing, the Contracting Officer may (i) decrease the property provided or to be provided by the Government under this contract, or (ii) substitute other Government-owned property for property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor shall promptly take such action as the Contracting Officer may direct with respect to the removal and shipping of property covered by such notice.
- (2) In the event of any decrease in or substitution of property pursuant to subparagraph (1) above, or any withdrawal of authority to use property provided under any other contract or lease, which property the Government had agreed in the Schedule to make available for the performance of this contract, the Contracting Officer, upon the written request of the Contractor (or, if the substitution of property causes a decrease in the cost of performance, on his own initiative), shall equitably adjust such contractual provisions as may be affected by the decrease, substitution, or withdrawal, in accordance with the procedures provided for in the "Changes" clause of this contract.

(c) Title. Title to all property furnished by the Government shall remain in the Government. In order to define the obligations of the parties

under this clause, title to each item of facilities, special test equipment, and special tooling (other than that subject to a "Special Tooling" clause) acquired by the Contractor for the Government pursuant to this contract shall pass to and vest in the Government when its use in the performance of this contract commences, or upon payment therefor by the Government, whichever is earlier, whether or not title previously vested. All Government-furnished property, together with all property acquired by the Contractor title to which vests in the Government under this paragraph, is subject to the provisions of this clause and is hereinafter collectively referred to as "Government property." Title to Government property shall not be affected by the incorporation or attachment thereof to any property not owned by the Government, nor shall such Government property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty.

(d) Property Administration. The Contractor shall comply with the provisions of Appendix B, Defense Acquisition Regulation, as in effect on the date of the contract, which is hereby incorporated by reference and made a part of this contract. Material to be furnished by the Government shall be ordered or returned by the Contractor, when required, in accordance with the "Manual for Military Standard Requisitioning and Issue Procedure (MILSTRIP) for Defense Contractors" (Appendix H, Defense Acquisition Regulation) as in effect on the date of this contract, which Manual is hereby incorporated by reference and made a part of this contract.

(e) Use of Government Property. The Government property shall, unless otherwise provided herein or approved by the Contracting Officer, be used only for the performance of this contract.

(f) Utilization, Maintenance and Repair of Government Property. The Contractor shall maintain and administer, in accordance with sound industrial practice, and in accordance with applicable provisions of Appendix B, a program for the utilization, maintenance, repair, protection, and preservation of Government property until disposed of by the Contractor in accordance with this clause. In the event that any damage occurs to Government property the risk of which has been assumed by the Government under this contract, the Government shall replace such items or the Contractor shall make such repair of the property as the Government directs; provided however, that if the Contractor cannot effect such repair within the time required, the Contractor shall dispose of such property in the manner directed by the Contracting Officer. The contract price includes no compensation to the Contractor for the performance of any repair or replacement for which the Government is responsible, and an equitable adjustment will be made in any contractual provisions affected by such repair or replacement of Government property made at the direction of the Government, in accordance with the procedures provided for in the "Changes" clause of this contract. Any repair or replacement for which the Contractor is responsible under the provisions of this contract shall be accomplished by the Contractor at his own expense.

(g) Risk of Loss. Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss of or damage to Government property provided under this contract upon its delivery to him or upon passage of title thereto to the Government as provided in paragraph (c) hereof, except for reasonable wear and tear and except to the extent that such property is consumed in the performance of this contract.

(h) Access. The Government, and any persons designated by it, shall at all reasonable times have access to the premises wherein any Government property is located, for the purpose of inspecting the Government property.

(i) Final Accounting and Disposition of Government Property. Upon the completion of this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property not consumed in the performance of this contract (including any resulting scrap) or not theretofore delivered to the Government, and shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid in such other manner as the Contracting Officer may direct.

(j) Restoration of Contractor's Premises and Abandonment. Unless otherwise provided herein, the Government:

- (i) may abandon any Government property in place, and thereupon all obligations of the Government regarding such abandoned property shall cease; and
- (ii) has no obligation to the Contractor with regard to restoration or rehabilitation of the Contractor's premises, neither in case of abandonment (paragraph (j)(i) above), disposition on completion of need or of the contract (paragraph (i) above), nor otherwise, except for restoration or rehabilitation costs which are properly included in an equitable adjustment under paragraph (b) above.

(k) Communications. All communications issued pursuant to this clause shall be in writing or in accordance with the "Manual for Military Standard Requisitioning and Issue Procedure (MILSTRIP) for Defense Contractors" (Appendix H, Defense Acquisition Regulation). (DAR 7-104.24(a))

#### 67. VARIATIONS IN ESTIMATED QUANTITIES (1968 APR)

(The following clause is not applicable to bid items listed in the "Variations in Estimated Quantities - Subdivided Items" clause, and also is not applicable to contracts for dredging work which contain the "Variations in Estimated Quantities - Dredging" clause.)

Where the quantity of a pay item in this contract is an estimated quantity and where the actual quantity of such pay item varies more than fifteen percent (15%) above or below the estimated quantity stated in this contract, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above one hundred fifteen percent (115%) or below eighty-five percent (85%) of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contracting Officer shall, upon receipt of a written request for an extension of time within ten (10) days from the beginning of such delay, or within such further period of time which may be granted by the Contracting Officer prior to the date of final settlement of the contract, ascertain the facts and make such adjustment for extending the completion date as in his judgment the findings justify. (DAR 7-603.27)

#### 68. PROGRESS CHARTS AND REQUIREMENTS FOR OVERTIME WORK (1965 JAN)

(a) The Contractor shall within 5 days or within such time as determined by the Contracting Officer, after date of commencement of work, prepare and submit to the Contracting Officer for approval a practicable schedule, showing the order in which the Contractor proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plant and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale

to indicate appropriately the percentage of work scheduled for completion at any time. The Contractor shall enter on the chart the actual progress at such intervals as directed by the Contracting Officer, and shall immediately deliver to the Contracting Officer three copies thereof. If the Contractor fails to submit a progress schedule within the time herein prescribed, the Contracting Officer may withhold approval of progress payment estimates until such time as the Contractor submits the required progress schedule.

(b) If, in the opinion of the Contracting Officer, the Contractor falls behind the progress schedule, the Contractor shall take such steps as may be necessary to improve his progress and the Contracting Officer may require him to increase the number of shifts, or overtime operations, days of work, or the amount of construction plant, or all of them, and to submit for approval such supplementary schedule or schedules in chart form as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Government.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this provision shall be grounds for determination by the Contracting Officer that the Contractor is not prosecuting the work with such diligence as will insure completion within the time specified. Upon such determination the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part thereof, in accordance with the clause of the contract entitled "Termination for Default - Damages for Delay - Time Extensions." (DAR 7-603.48).

69. CERTIFICATION OF REQUESTS FOR ADJUSTMENT OR RELIEF EXCEEDING \$100,000 (1980 FEB)

(The following clause is applicable if this contract is expected to exceed \$100,000 in value)

(a) Any contract claim, request for equitable adjustment to contract terms, request for relief under Public Law 85-804, or other similar request exceeding \$100,000 shall bear, at the time of submission, the following certificate given by a senior company official in charge at the plant or location involved:

I certify that the claim is made in good faith, that the supporting data are accurate and complete to the best of my knowledge and belief; and that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable.

\_\_\_\_\_  
(Official's Name)

\_\_\_\_\_  
(Title)

(b) The certification in paragraph (a) requires full disclosure of all relevant facts, including cost and pricing data.

(c) The certification requirement in paragraph (a) does not apply to:

(i) requests for routine contract payments--for example, those for payment for accepted supplies and services, routine vouchers under cost reimbursement-type contracts and progress payment invoices;

(ii) final adjustments under incentive provisions of contracts;

(d) In those situations where no claim certification for the purposes of Section 813 has been submitted prior to the inception of a contract dispute, a single certification, using the language prescribed by the Contract Disputes Act but signed by a senior company official in charge at the plant or location involved, will be deemed to comply with both statutes. (DAR 7-104.102)

70. AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (1978 SEP)

(a) As used in this clause:

1. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

2. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

3. "Employer identification number" means the Federal social security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

4. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(b) Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of this clause and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitation from which this contract resulted.

(c) If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan, in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractors or subcontractors failure to take good faith efforts to achieve the Plan goals and timetables.

(d) The Contractor shall implement the specific affirmative action standards provided in paragraphs (g)(1) through 16 of this clause. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

(e) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, or the regulations promulgated pursuant thereto.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

(1) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

(2) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

(4) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under (g)(2) above.

(6) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

(7) Review, at least annually, the company's EEO policy and affirmative action obligations under this clause with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

(9) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

(11) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

(13) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under this clause are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

(15) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

(h) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations ((g)(1) through (16)). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under (g)(1) through (16) of this clause provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities

and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

(j) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of this clause and Executive Order 11246, as amended.

(m) The Contractor, in fulfilling its obligations under this clause shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or this clause, the Director shall proceed in accordance with 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

(o) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program). (DAR 7-603.60)

#### 71. GEOGRAPHIC DISTRIBUTION OF DEFENSE SUBCONTRACT DOLLARS (1978 SEP)

(The following clause is applicable if (1) the procurement instrument identification number is prefixed by the letters "DACA", (2) material to be

SUPERSEDES DECISION

STATE: Arizona  
 DECISION NUMBER: AZ80-5116  
 Supersedes Decision No. AZ79-5100 dated February 9, 1979, in 43 FR 8482

COUNTIES: Statewide  
 DATE: Date of Publication

DESCRIPTION OF WORK: Building Projects (does not include single family homes and apartments up to and including 4 stories), Heavy and Highway Projects

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
<b>ASBESTOS WORKERS:*</b>					
Zone 1	\$14.19	.82	\$1.30		.03
Zone 2	14.89	.82	1.30		.03
Zone 3	15.09	.82	1.30		.03
Zone 4	15.54	.82	1.30		.03
Zone 5	17.69	.82	1.30		.03
Zone 5	14.36	1.175	1.00	1.00	.03
<b>BOILERMAKERS</b>					
<b>BRICKLAYERS; Stonemasons:*</b>					
<b>Northern Area:*</b>					
Zone A	12.52	.65	1.10		.09
Zone B	13.53	.65	1.10		.09
Zone C	14.15	.65	1.10		.09
Zone D	14.77	.65	1.10		.09
Zone E	15.27	.65	1.10		.09
Zone F	16.28	.65	1.10		.09
<b>Southern Area:*</b>					
Zone A:					
Bricklayers; Stonemasons	11.96	1.00	.95		.06
Manhole Builders	12.21	1.00	.95		.06
Zone B:					
Bricklayers; Stonemasons	12.33	1.00	.95		.06
Manhole Builders	12.58	1.00	.95		.06
Zone C:					
Bricklayers; Stonemasons	12.71	1.00	.95		.06
Manhole Builders	12.96	1.00	.95		.06
Zone D:					
Bricklayers; Stonemasons	13.46	1.00	.95		.06
Manhole Builders	13.71	1.00	.95		.06

\*See AREA and ZONE Definitions - following page

40424

Federal Register / Vol. 45, No. 116 / Friday, June 13, 1980 / Notices

AREA and ZONE DEFINITIONS

ASBESTOS WORKERS:

- Zone 1: Area lying within 15 miles radius from the City Hall in Phoenix or Tucson
- Zone 2: Area lying beyond the limits of Zone 1 and within 30 miles radius from the City Hall in Phoenix or Tucson
- Zone 3: Area lying beyond the limits of Zone 2 and within 40 miles radius from the City Hall in Phoenix or Tucson
- Zone 4: Area lying beyond the limits of Zone 3 and within 50 miles radius from the City Hall in Phoenix or Tucson
- Zone 5: Area lying beyond the limits of Zone 4

BRICKLAYERS; STONEMASONS:

Northern Area: Apache, Coconino and Gila Counties; Graham County (west and north of the San Francisco River to the Gila River); Greenlee County (west and north of the San Francisco River to the Gila River); Maricopa, Mohave, and Navajo Counties; Pinal County (north of a boundary line drawn west along the Gila River to the western city limits of Florence, a straight line from the extreme southwestern city limits of Florence to the extreme southern city limits of Coolidge, then a straight line to the extreme southern city limits of Casa Grande, with the line extending to the Maricopa/Pinal County line); Yavapai, and Yuma Counties:

- Zone A: 0-35 road miles from the City Hall in Phoenix
- Zone B: 35-45 road miles from the City Hall in Phoenix
- Zone C: 50-75 road miles from the City Hall in Phoenix
- Zone D: 75-100 road miles from the City Hall in Phoenix
- Zone E: 100-150 road miles from the City Hall in Phoenix
- Zone F: 200 road miles and over from the City Hall in Phoenix

Southern Area: Cochise County; Graham County (east and south of the San Francisco River to the Gila River); Greenlee County (east and south of the San Francisco River to the Gila River); Pima County; Pinal County (south of a boundary line drawn west along the Gila River to the western city limits of Florence, a straight line from the extreme southwestern city limits of Florence to the extreme southern city limits of Coolidge, then a straight line to the extreme southern city limits of Casa Grande, with the line extending to the Maricopa/Pinal County line); Santa Cruz Counties:

- Zone A: 0-10 road miles from Tucson City limits
- Zone B: 15-30 road miles from Tucson City limits
- Zone C: 35-40 road miles from Tucson City limits
- Zone D: Over 40 road miles from Tucson City limits

RM-2

CARPENTERS:\*

- Northern Area:
  - Carpenters; Drywall Applicator; Saw Filers; Shingler
  - Floorlayers (finish); Piledrivermen
  - Millwrights
- Central and Southern Areas:
  - Carpenters; Saw Filers
  - Floorlayers (finish); Piledrivermen
  - Millwrights

CEMENT MASONS:\*

- Zone 1:
  - Northern Area:
    - Cement Masons
    - Concrete Troweling Machine; Sawing and Scoring Machine; Curb and Gutter Machine
  - Central & Southern Areas:
    - Cement Masons
    - Concrete Troweling Machine; Sawing and Scoring Machine; Curb and Gutter Machine
- Zone 2:
  - Cement Masons
  - Concrete Troweling Machine; Sawing and Scoring Machine; Curb and Gutter Machine; Glary and similar type of power screed operator
- DRYWALL TAPERS:\*
- Zone A:
- Zone B:
- Zone C:

Basic Hourly Rates	Fringe Benefits Payments			
	M & V	Pensions	Vacation	Education and/or Appr. Tr.
\$13.56	\$1.075	1.085		.05
13.865	1.075	1.085		.05
14.005	1.075	1.085		.05
11.435	1.075	1.085		.05
11.74	1.075	1.085		.05
11.88	1.075	1.085		.05
13.085	.95	1.30		.05
13.255	.95	1.30		.05
11.21	.95	1.30		.05
11.39	.95	1.30		.05
11.44	.92	1.10		.05
11.61	.92	1.10		.05
11.96	.50	.50		.12
12.96	.50	.50		.12
14.21	.50	.50		.12

\*See AREA and ZONE Definitions - following page.

AREA and ZONE DEFINITIONS

**CARPENTERS:**

**Northern Area:** Area north of a straight line drawn between a point 35 miles due north of the City Hall in Flagstaff and a point 35 miles due north of the City Hall in Kingman, extending to the Arizona/Nevada State Line on the west; and connecting to a point 35 miles due north of the City Hall in Holbrook, thence due east to the intersection of the Arizona/New Mexico State Line

**Central and Southern Areas:** All areas not included in the Northern Area

**CEMENT MASONS:**

**Zone 1:** Apache, Coconino, and Gila Counties; Graham County (north of Sentinel - Casa Grande - Safford Line); Greenlee County (north of Sentinel - Casa Grande - Safford Line); Maricopa County (north of Sentinel - Casa Grande - Safford Line); Mohave and Navajo Counties; Pinal County (north of Sentinel - Casa Grande - Safford Line); Yavapai and Yuma Counties;

**Northern Area:** Area north of a straight line drawn between a point 35 miles due north of the City Hall in Flagstaff and a point 35 miles due north of the City Hall in Kingman, extending to the Arizona/Nevada State Line on the west; and connecting to a point 35 miles due north of the City Hall in Holbrook, thence due east to the intersection of the Arizona/New Mexico State Line

**Central and Southern Areas:** All areas not included in the Northern Area

**Zone 2:** Cochise County; Graham County (south of Sentinel - Casa Grande - Safford Line); Greenlee County (south of Sentinel - Casa Grande - Safford Line); Maricopa County (south of Sentinel - Casa Grande - Safford Line); Pima County; Pinal County (south of Sentinel - Casa Grande - Safford Line); Santa Cruz County

**DRYWALL TAPERS:**

**Zone A:** 0-40 road miles from Courthouse in Phoenix; Also Luke and Williams Air Force Bases

**Zone B:** 41-60 road miles from Courthouse in Phoenix

**Zone C:** 61 road miles and over from Courthouse in Phoenix

**ELECTRICIANS:\***

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Area 1:					
Electricians	\$15.06	.60	3%+.70		1/2%
Cable Splicers	15.69	.60	3%+.70		1/2%
Area 2:					
Electricians	13.80	.96	.88		1/2%
Area 3:					
Zone A:					
Electricians; Technicians	15.07	.60	11%		1%
Cable Splicers	15.32	.60	11%		1%
Zone B:					
Electricians; Technicians	15.81	.60	11%		1%
Cable Splicers	16.06	.60	11%		1%
Zone C:					
Electricians; Technicians	16.44	.60	11%		1%
Cable Splicers	16.69	.60	11%		1%
Zone D:					
Electricians; Technicians	17.19	.60	11%		1%
Cable Splicers	17.44	.60	11%		1%
Area 4:					
Electricians	14.85	.96	3%+.88		3/4%
Area 5:					
Zone A:					
Electricians	14.94	.60	11%		1/2%
Cable Splicers	15.19	.60	11%		1/2%
Zone B:					
Electricians	15.68	.60	11%		1/2%
Cable Splicers	15.93	.60	11%		1/2%
Zone C:					
Electricians	16.31	.60	11%		1/2%
Cable Splicers	16.56	.60	11%		1/2%
Zone D:					
Electricians	17.06	.60	11%		1/2%
Cable Splicers	17.31	.60	11%		1/2%
ELEVATOR CONSTRUCTORS	13.85	.895	.69	a	.03
GLAZIERS:					
Statewide excluding					
Bullhead City	12.17	.90	.30		.01
Bullhead City	15.46	.75	.40		.05

\*See AREA and ZONE Definitions - following page

RW-3

## AREA and ZONE DEFINITIONS

## ELECTRICIANS:

Area 1: Apache County (north of Highway #66)

Area 2: Coconino County; Navajo County (north and west of a boundary line beginning at a point where Clear Creek crosses the Coconino/Navajo County Line and then extending in a northeasterly direction along Clear Creek and northeasterly to Cottonwood Wash, along Cottonwood Wash extending northeasterly to where it intersects the Navajo Indian Reservation, then easterly along the Navajo Indian Reservation boundary line to a point where it intersects the Navajo/Apache County Line)

Area 3: Apache County (south of Highway #66); Gila County; Navajo County (south and east of a boundary beginning at a point where Clear Creek crosses the Coconino/Navajo County Line, then extending in a northeasterly direction along Clear Creek and northeasterly to Cottonwood Wash, along Cottonwood Wash extending northeasterly to where it intersects the Navajo Indian Reservation, then easterly along the Navajo Indian Reservation boundary line to a point where it intersects the Navajo/Apache County Line); Pinal County (north of the line, "First Standard Parallel South" and east of the line "Second Guide Meridian East");

Zone A: Area within 16 road miles beginning where the Southern Pacific Railroad intersects Highway 60-70 at Kaiser Crossing; Area within 12 miles radius from the school in Lakeside, Arizona

Zone B: Area within 16-28 road miles from point where the Southern Pacific Railroad intersects Highway 60-70 at Kaiser Crossing

Zone C: Area within 28-46 road miles from point where the Southern Pacific Railroad intersects Highway 60-70 at Kaiser Crossing

Zone D: Area 46 road miles and over from point where the Southern Pacific Railroad intersects Highway 60-70 at Kaiser Crossing; Area over 12 miles radius from school in Lakeside, Arizona

## AREA and ZONE DEFINITIONS (Cont'd)

## ELECTRICIANS: (Cont'd)

Area 4: Maricopa and Mohave Counties; Pinal County (north and west of the boundary line beginning at a point where the Papago Indian Reservation Road #15 crosses the Pima/Pinal County Line, then extending in a northeasterly direction on the Papago Indian Reservation Road #15 to the intersection with the Florence Canal, north and east on the Florence Canal to the intersection with the line, "Second Guide Meridian East", then north to the Pinal/Maricopa County Line); Yavapai County

Area 5: Cochise, Graham, Greenlee, and Pima Counties, Pinal County (south and east of the boundary line beginning at a point where the Papago Indian Reservation Road #15 crosses the Pima/Pinal County Line, then extending in a northeasterly direction on the Papago Indian Reservation Road #15 to the intersection with the Florence Canal, north and east on the Florence Canal to the intersection with the line, "Second Guide Meridian East"; then north to the line, "First Standard Parallel South", and along that line to the Graham/Pinal County Line); Santa Cruz and Yuma Counties;

Zone A: Area within 16 miles radius from the City Hall in Tucson or Yuma; Area within 16 road miles from center of town in Douglas, Nogales or Sierra Vista; Area within the boundaries of the incorporated city limits of Parker, plus an area extending from the south city limits of Parker in a northeasterly direction to Milepost No. 150 located on State Highway #95, northeast of Parker from the Colorado River on the west, an area 1 mile wide paralleling the Colorado River

Zone B: Area lying beyond the limits of Zone A extending to and including 12 road miles excluding area near Douglas, Nogales and Sierra Vista

Zone C: Area lying beyond the limits of Zone B extending up to and including 18 road miles, excluding area near Douglas, Nogales and Sierra Vista

Zone D: Area lying beyond the limits of Zone C, for area near the cities of Douglas, Nogales, Sierra Vista, the area lying beyond the limits of Zone A

## AREA and ZONE DEFINITIONS

	Basic Hourly Rates	Fringe Benefits Payments			Education and/or Appr. Tr.
		H & W	Pensions	Vacation	
<b>IRONWORKERS:*</b>					
Northern Area	\$15.61	\$1.54	\$2.57		.11
Central and Southern Areas	13.35	1.54	2.57		.11
<b>LATHERS:*</b>					
Area 1	12.49	.75			.06
Area 2:					
Zone A	12.53	.50			
Zone B	13.03	.50			
Zone C	13.28	.50			
Zone D	14.03	.50			
<b>LINE CONSTRUCTION:*</b>					
Zone 1:					
Groundmen	11.09	1.00	3%+2.00		1/2%
Equipment Operators; Powdermen; Mechanics	13.10	1.00	3%+2.00		1/2%
Linemen; Technicians;					
Crane Operators	14.76	1.00	3%+2.00		1/2%
Cable Splicers	15.19	1.00	3%+2.00		1/2%
Zone 1-A:					
Groundmen	12.00	1.00	3%+2.00		1/2%
Equipment Operators; Powdermen; Mechanics	13.93	1.00	3%+2.00		1/2%
Linemen; Technicians;					
Crane Operators	15.65	1.00	3%+2.00		1/2%
Cable Splicers	16.17	1.00	3%+2.00		1/2%
Zone 2:					
Groundmen	12.85	1.00	3%+2.00		1/2%
Equipment Operators; Powdermen; Mechanics	14.79	1.00	3%+2.00		1/2%
Linemen; Technicians					
Crane Operators	16.51	1.00	3%+2.00		1/2%
Cable Splicers	16.98	1.00	3%+2.00		1/2%
<b>MARBLE WORKERS:*</b>					
Area 1	12.16	.65	1.10		.19
<b>MASON TENDERS</b>	9.80	.92	1.10		.06

\*See AREA and ZONE  
Definitions - following  
Page

**IRONWORKERS:**

Northern Area: Area north of a straight line drawn between a point 35 miles due north of the City Hall in Flagstaff, and a point 35 miles due north of the City Hall in Kingman, extending to the Arizona/Nevada State Line on the west; and connecting to a point 35 miles due north of the City Hall in Holbrook, thence due east to the intersection of the Arizona/New Mexico State Line

Central and Southern Areas: All areas not included in the Northern Area

**LATHERS:**

Area 1: North of a line crossing the State drawn through Ajo, Randolph and Springerville; except as follows: northeast of a line drawn from Springerville to a point 4 miles northeast of Keams Canyon

Area 2: South of a line crossing the State drawn through Ajo, Randolph and Springerville:

Area A: Area within 30 mile radius of the City Hall in Tucson

Area B: Area within 30 - 40 mile radius of the City Hall in Tucson

Area C: Area within 40 - 50 mile radius of the City Hall in Tucson

Area D: Area outside of Zone C

**LINE CONSTRUCTION:**

Zone 1: Phoenix and Tucson 30 mile radius from center of Town

Zone 1-A: Douglas, Flagstaff, Globe, Kingman, Prescott and Yuma 10 mile radius from the center of Town

Zone 2: Other Areas

**MARBLE WORKERS:**

Area 1: Apache, Coconino, and Gila Counties; Graham County (west and north of San Francisco River to Gila River); Greenlee County (west and north of San Francisco River to Gila River); Maricopa, Mohave and Navajo Counties; Pinal County (north of a boundary line drawn west along the Gila River to the western city limits of Florence, a straight line from the extreme southwestern city limits of Florence to the extreme southern city limits of Coolidge, then a straight line to the extreme southern city limits of Casa Grande with the line extending to the Maricopa/Pinal County Line); Yavapai and Yuma Counties

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
<b>PAINTERS:*</b>					
<b>Area 1:</b>					
<b>Zone A:</b>					
Brush; Soft Floor Layers	\$11.60	.90	.80		.20
Brush, steel and bridge	12.10	.90	.80		.20
Spray	12.05	.90	.80		.20
Spray, steel and bridge	12.60	.90	.80		.20
<b>Zone B:</b>					
Brush; Soft Floor Layers	12.35	.90	.80		.20
Brush, steel and bridge	12.85	.90	.80		.20
Spray	12.80	.90	.80		.20
Spray, steel and bridge	13.35	.90	.80		.20
<b>Zone C:</b>					
Brush; Soft Floor Layers	13.35	.90	.80		.20
Brush, steel and bridge	13.85	.90	.80		.20
Spray	13.80	.90	.80		.20
Spray, steel and bridge	14.35	.90	.80		.20
<b>Zone D:</b>					
Brush; Soft Floor Layers	13.60	.90	.80		.20
Brush, steel and bridge	14.10	.90	.80		.20
Spray	14.05	.90	.80		.20
Spray, steel and bridge	14.60	.90	.80		.20
<b>Area 2:</b>					
<b>Zone A:</b>					
Brush and Roller; Sandblaster (Nozzleman); Sandblaster (Pot Tender)	11.88	.60	.50		.08
Spray	12.13	.60	.50		.08
Creosote Applier	12.21	.60	.50		.08
<b>Swing Stage:</b>					
Brush; Sandblaster	12.28	.60	.50		.08
Spray	12.53	.60	.50		.08
Steeplejack	12.74	.60	.50		.08
Steel and bridge, brush; Steel Sandblaster	12.81	.60	.50		.08
Steel and bridge, Spray	13.01	.60	.50		.08
<b>Zone B:</b>					
Brush and Roller; Sandblaster (Nozzleman); Sandblaster (Pot Tender)	12.88	.60	.50		.08
Spray	13.13	.60	.50		.08
Creosote Applier	13.21	.60	.50		.08

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
<b>PAINTERS:*</b> (Cont'd)					
<b>Area 2 - Zone B: (Cont'd)</b>					
<b>Swing Stage:</b>					
Brush; Sandblaster	\$13.28	.60	.50		.08
Spray	13.53	.60	.50		.08
Steeplejack	13.74	.60	.50		.08
Steel and bridge, Brush; Steel Sandblaster	13.81	.60	.50		.08
Steel and bridge, Spray	14.01	.60	.50		.08
<b>Zone C:</b>					
Brush and Roller; Sandblaster (Nozzleman); Sandblaster (Pot Tender)	14.38	.60	.50		.08
Spray	14.63	.60	.50		.08
Creosote Applier	14.71	.60	.50		.08
<b>Swing Stage:</b>					
Brush; Sandblaster	14.70	.60	.50		.08
Spray	15.03	.60	.50		.08
Steeplejack	15.24	.60	.50		.08
Steel and bridge, Brush; Steel Sandblaster	15.31	.60	.50		.08
Steel and bridge, Spray	15.51	.60	.50		.08
<b>Area 3:</b>					
<b>Zone A:</b>					
Brush	10.29	.77	.45		.08
Spray; Sandblasters	10.79	.77	.45		.08
Paperhangers	10.43	.77	.45		.08
<b>Swing Stage, under 40 ft.:</b>					
Brush	10.59	.77	.45		.08
Spray	11.09	.77	.45		.08
<b>Swing Stage, over 40 ft.:</b>					
Brush	11.04	.77	.45		.08
Spray	11.54	.77	.45		.08
<b>Structural Steel and Tanks:</b>					
Brush	11.29	.77	.45		.08
Spray and Sandblasters	11.79	.77	.45		.08
<b>Zone B:</b>					
Brush	11.04	.77	.45		.08
Spray and Sandblasters	11.54	.77	.45		.08
Paperhangers	11.18	.77	.45		.08
<b>Swing Stage, under 40 ft.:</b>					
Brush	11.34	.77	.45		.08
Spray	11.84	.77	.45		.08

RM-6

PAINTERS: \* (Cont'd)  
 Area 3 - Zone B: (Cont'd)  
 Swing Stage, over  
 40 ft.:  
 Brush \$11.79 .77 .45 .08  
 Spray 12.29 .77 .45 .08  
 Structural Steel and  
 Tanks:  
 Brush 12.04 .77 .45 .08  
 Spray and Sandblasters 12.54 .77 .45 .08  
 Zone C:  
 Brush 11.79 .77 .45 .08  
 Spray 12.29 .77 .45 .08  
 Paperhangers 11.93 .77 .45 .08  
 Swing Stage, under  
 40 ft.:  
 Brush 12.09 .77 .45 .08  
 Spray 12.59 .77 .45 .08  
 Swing Stage, over  
 40 ft.:  
 Brush 12.54 .77 .45 .08  
 Spray 13.04 .77 .45 .08  
 Structural Steel and  
 Tanks:  
 Brush 12.79 .77 .45 .08  
 Spray and Sandblasters 13.29 .77 .45 .08  
 Zone D:  
 Brush 12.29 .77 .45 .08  
 Spray 12.79 .77 .45 .08  
 Paperhangers 12.43 .77 .45 .08  
 Swing Stage, under  
 40 ft.:  
 Brush 12.59 .77 .45 .08  
 Spray 13.09 .77 .45 .08  
 Swing Stage, over  
 40 ft.:  
 Brush 13.04 .77 .45 .08  
 Spray 13.54 .77 .45 .08  
 Structural Steel and  
 Tanks:  
 Brush 13.29 .77 .45 .08  
 Spray and Sandblasters 13.79 .77 .45 .08  
 \*See AREA and ZONE  
 Definitions - following  
 Page

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$11.79	.77	.45		.08
12.29	.77	.45		.08
12.04	.77	.45		.08
12.54	.77	.45		.08
11.79	.77	.45		.08
12.29	.77	.45		.08
11.93	.77	.45		.08
12.09	.77	.45		.08
12.59	.77	.45		.08
12.54	.77	.45		.08
13.04	.77	.45		.08
12.79	.77	.45		.08
13.29	.77	.45		.08
12.29	.77	.45		.08
12.79	.77	.45		.08
12.43	.77	.45		.08
12.59	.77	.45		.08
13.09	.77	.45		.08
13.04	.77	.45		.08
13.54	.77	.45		.08
13.29	.77	.45		.08
13.79	.77	.45		.08

AREA and ZONE DEFINITIONS

PAINTERS:

Area 1: Apache County (north of Woodruff/Camp Wood Line); Coconino County (north of Woodruff/Camp Wood Line); Mohave County (north of a line following the Geodetic Hualapai Boundary Line to the Colorado River, a distance of 23 miles east of Pierce Ferry and then intersecting the Arizona/Nevada State Line); Navajo County (north of Woodruff/Camp Wood Line); Yavapai County (north of Woodruff/Camp Wood Line):

- Zone A: 0-20 road miles from Courthouse in Flagstaff
- Zone B: 20-35 road miles from Courthouse in Flagstaff
- Zone C: 35-80 road miles from Courthouse in Flagstaff
- Zone D: 80 road miles and over from Courthouse in Flagstaff

Area 2: Apache County (south of the Woodruff/Camp Wood Line); Coconino County (south of Woodruff/Camp Wood Line); Gila County; Graham County (north of 33rd Parallel); Greenlee County (north of 33rd Parallel); Maricopa County (north of 33rd Parallel); Mohave County (south of a line following the Geodetic Hualapai Boundary Line to the Colorado River, a distance of 23 miles east of Pierce Ferry and then intersecting the Arizona/Nevada State Line); Navajo County (south of Woodruff/Camp Wood Line); Pinal County (north of 33rd Parallel); Yavapai County (south of Woodruff/Camp Wood Line):

- Zone A: 0-40 paved road miles from Courthouse in Phoenix; also, Luke and Williams Air Force Bases
- Zone B: 41-60 paved road miles from Courthouse in Phoenix
- Zone C: 61 paved road miles and over from Courthouse in Phoenix

Area 3: Cochise County; Graham County (south of 33rd Parallel); Greenlee County (south of 33rd Parallel); Maricopa County (south of 33rd Parallel); Pima County; Pinal County (south of 33rd Parallel); Santa Cruz and Yuma Counties:

- Zone A: 0-30 paved road miles from Stone and Congress in Tucson or from the County Courthouse in Yuma
- Zone B: 31-40 paved road miles from Stone and Congress in Tucson or from the County Courthouse in Yuma
- Zone C: 41-50 paved road miles from Stone and Congress in Tucson or from the County Courthouse in Yuma
- Zone D: 51 paved road miles and over from Stone and Congress in Tucson or from the County Courthouse in Yuma

RM-7

40430 Federal Register / Vol. 45, No. 116 / Friday, June 13, 1980 / Notices

AREA and ZONE DEFINITIONS

PLASTERERS:\*

Area 1:  
Zone A  
Zone B  
Zone C

Area 2:  
Zone A  
Zone B  
Zone C  
Zone D

PLASTERER TENDERS

PLUMBERS:\*

Zone 1  
Zone 2  
Zone 3  
Zone 4

ROOFERS:\*

Area 1  
Area 2:  
Zone A:

Roofers & Waterproofers:  
Shingler (asbestos,  
wood and asphalt)  
Pitch and Enamel

Zone B:

Roofers & Waterproofers:  
Shingler (asbestos,  
wood and asphalt)  
Pitch and Enamel

Zone C:

Roofers & Waterproofers:  
Shingler (asbestos,  
wood and asphalt)  
Pitch and Enamel

\*See AREA and ZONE  
Definitions following  
Page

Basic Hourly Rates	Fringe Benefits/Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$ 11.77	.95	\$1.30		.06
12.52	.95	1.30		.06
13.645	.95	1.30		.06
8.57	.35	.60		
9.07	.35	.60		
8.32	.35	.60		
10.07	.35	.60		
10.30	.92	1.10		.10
14.24	.75	1.35		.13
14.64	.75	1.35		.13
15.09	.75	1.35		.13
16.59	.75	1.35		.13
11.66	1.095	.45		.05
10.77	1.095	.20		.03
12.77	1.095	.20		.03
13.02	1.095	.20		.03
15.02	1.095	.20		.03
13.27	1.095	.20		.03
15.27	1.095	.20		.03

PLASTERERS:

Area 1: Apache, Coconino, and Gila Counties; Graham County (north of Sentinel - Casa Grande - Safford Line); Greenlee County (north of Sentinel - Casa Grande - Safford Line); Maricopa County (north of Sentinel - Casa Grande - Safford Line); Mohave and Navajo Counties; Pinal County (north of Sentinel - Casa Grande - Safford Line); Yavapai and Yuma Counties:

Zone A: 0-35 miles from Phoenix  
Zone B: 35-60 miles from Phoenix  
Zone C: 60 miles and over from Phoenix

Area 2: Cochise County; Graham County (south of Sentinel - Casa Grande - Safford Line); Greenlee County (south of Sentinel - Casa Grande - Safford Line); Maricopa County (south of Sentinel - Casa Grande - Safford Line); Pima County; Pinal County (south of Sentinel - Casa Grande - Safford Line); Santa Cruz County:

Zone A: 0-30 miles radius from Tucson  
Zone B: 30-40 miles radius from Tucson  
Zone C: 40-50 miles radius from Tucson  
Zone D: 50 miles radius and over from Tucson

PLUMBERS:

Zone 1: Area within 15 road miles from either the intersection of Central Avenue and Jefferson Street in Phoenix or the Old Main Building of the University of Arizona in Tucson or the Main Post Office Building in either Douglas, Flagstaff or Yuma; Also, all areas within the City limits of Havasu City, Holbrook, Kingman, Prescott and Winslow; Also, that area bordered by the Apache Trail on the north, Higley Road on the east, Elliott Road on the south and Arizona Avenue on the west

Zone 2: Over 15 and up to 30 road miles from either the intersection of Central Avenue and Jefferson Street in Phoenix or the Old Main Building of the University of Arizona in Tucson

Zone 3: Over 30 and up to 40 road miles from either the intersection of Central Avenue and Jefferson Street in Phoenix or the Old Main Building of the University of Arizona in Tucson

Zone 4: Over 40 road miles from either the intersection of Central Avenue and Jefferson Street in Phoenix or the Old Main Building of the University of Arizona in Tucson

RW-8

AREA and ZONE DEFINITIONS (Cont'd)

ROOFERS:

Area 1: Apache, Coconino, Gila, Maricopa, Mohave, Navajo, Pinal, Yavapai and Yuma Counties

Area 2: Cochise, Graham, Greenlee, Pima and Santa Cruz Counties:

Zone A: Area less than 44 road miles from City Hall in Tucson

Zone B: Area from 44 to 100 road miles from City Hall in Tucson

Zone C: Area over 100 road miles from City Hall in Tucson

RW-9

SHEET METAL WORKERS:\*

Area 1:

Zone 1

Zone 2

Zone 3

Area 2:

Zone A

Zone B

Zone C

SOFT FLOOR LAYERS

SPRINKLER FITTERS

TERRAZZO WORKERS; TILE

SETTERS:\*

\*See AREA and ZONE Definitions following Page

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$13.865	\$1.00	\$1.515		.12
14.515	1.00	1.515		.12
16.365	1.00	1.515		.12
11.42	3%+1.14	1.92		.02
12.37	3%+1.14	1.92		.02
13.92	3%+1.14	1.92		.02
10.87	.69	.12		.12
14.48	.75	1.05		.08
12.16	.65	1.10		.19

FOOTNOTE

a. Employer contributes 8% of basic hourly rate for 5 years' service and 6% of basic hourly rate for 6 months' to 5 years' service as Vacation Pay Credit. Seven Paid Holidays: A through G

PAID HOLIDAYS:

A-New Year's Day; B-Memorial Day; C-Independence Day; D-Labor Day; E-Thanksgiving Day; F-Friday after Thanksgiving; G-Christmas Day

AREA and ZONE DEFINITIONS

SHEET METAL WORKERS:

Area 1: Apache, Coconino, and Gila Counties; Graham County (north of 33rd Parallel); Greenlee County (north of 33rd Parallel); Maricopa, Mohave, and Navajo Counties; Pinal County (north of 33rd Parallel); Yavapai and Yuma Counties:

Zone 1: 0-25 miles radius, excluding Luke and Williams Air Force Bases, from the following base points: the intersection of 56th Street and Indian School Road in Phoenix, and the City Hall in Flagstaff, Kingman, Prescott and Yuma

Zone 2: 25-50 miles radius from the base points listed in Zone 1; also Luke and Williams Air Force Bases

Zone 3: 50 miles radius and over from the base points listed in Zone 1

Area 2: Cochise county; Graham County (south of 33rd Parallel); Greenlee County (south of 33rd Parallel); Pima County; Pinal County (south of 33rd Parallel); Santa Cruz County:

Zone A: 0-22 miles radius from Tucson City Hall or Douglas City Hall

Zone B: 22-45 miles radius from Tucson City Hall or Douglas City Hall

Zone C: Over 45 miles radius from Tucson City Hall or Douglas City Hall; also San Manuel and vicinity

TERRAZZO WORKERS; TILE SETTERS:

Area 1: Apache, Coconino, and Gila Counties; Graham County west and north of San Francisco River to Gila River; Greenlee County (west and north of San Francisco River to Gila River); Maricopa, Mohave and Navajo Counties; Pinal County (north of a boundary line drawn west along the Gila River to the western city limits of Florence, a straight line from the extreme southwestern city limits of Florence to the extreme southern city limits of Coolidge, then a straight line to the extreme southern city limits of Casa Grande, with the line extending to the Maricopa/Pinal county line); Yavapai and Yuma Counties

RW-10

LABORERS:\*

	Basic Hourly Rates	Basic Hourly Rates	Fringe Benefits Payments			
			H & W	Pensions	Vacation	Education and/or Appr. Tr.
	N Area	C and S Area				
Group 1	\$10.935	\$9.06	.92	\$1.10		.10
Group 2	11.075	9.20	.92	1.10		.10
Group 3	11.225	9.35	.92	1.10		.10
Group 4	11.345	9.47	.92	1.10		.10
Group 5	11.525	9.65	.92	1.10		.10
Group 6	11.93	10.055	.92	1.10		.10
Group 7	12.62	10.745	.92	1.10		.10
(Tunnel and Shaft Work)						
Group 1	11.20	9.325	.92	1.10		.10
Group 2	11.375	9.50	.92	1.10		.10
Group 3	11.515	9.64	.92	1.10		.10
Group 4	11.905	10.03	.92	1.10		.10
Group 5	12.10	10.225	.92	1.10		.10
Group 5-A	12.37	10.495	.92	1.10		.10

AREA DEFINITIONS:

Northern Area:

Area north of a straight line drawn between a point 35 miles due north of the City Hall in Flagstaff and a point 35 miles due north of the City Hall in Kingman, extending to the Arizona/Nevada State Line on the west; and connecting to a point 35 miles due north of the City Hall in Holbrook, thence due east to the intersection of the Arizona/New Mexico State Line

Central and Southern Areas:

All Areas not included in the Northern Area

Federal Register / Vol. 45, No. 125 / Friday, June 13, 1980 / Notices

## LABORERS

Group 1: Laborer, general or construction; Tool Dispatcher or Checker; Manually-controlled Signal Operator; Fence Builder, Guard Rail Builder - highway; Chat Box Man; Dumpman and/or Spotter; Rip Rap Stone Man; Form Strippers; Landscape Gardener and Nurseryman; Packing Rod Steel and Pans; Window Cleaners; Cesspool Diggers and Installers; Concrete Dump Man - belt, Pipe and/or Hoseman; Astro-turf Layers; Clean-up, Bull Gang and Trackman - railroad; Chipper (clearing and grubbing)

Group 2: Cement Finisher Tender; Concrete Curer (Impervious Membrane); Cutting Torch Operator; Fine Grader (highway, engineering and sewer work only); Kettleman - Tarman; Power-type Concrete Buggy

Group 3: Chuck Tender (except tunnel); Sandblaster (Pot Tender); Powderman Tender; Spikers and Wrenchers; Rip Rap Stone Pavers; Creosote Tieman; Guinea Chaser; Bander

Group 4: Operator and Tenders of pneumatic and electric tools; Concrete Vibrating Machines; Chain Saw Machines (on clearing and grubbing); Floor Sanders - concrete; Hydraulic Jacks and similar mechanical tools not separately herein classified; Cement Dumpers (skip-type Mixer or handling bulk cement); Pipe Caulker and/or Backup Man (pipeline); Rigger/Signalman (pipeline); Pipe Wrapper; Cribber and Shorer (except tunnel); Pneumatic Gopher

Group 5: Grade Setter (pipeline); Driller; Jackhammer and/or Pavement Breakers; Pipe Layer (including but not limited to non-metallic, transite and plastic pipe, water pipe, sewer pipe, drain pipe, underground tile and conduit); Rock Slinger; Asphalt Rakers and Ironers; Air and Water Wash-out Nozzleman; Scaler (using Bos'n's Chair or Safety Belt); Tampers (mechanical, all types); Hand-guided Trencher and similar operated equipment; Precast Manhole Erector

Group 6: Driller (Core, Diamond, Wagon or Air Track); Sandblaster (Nozzleman); Concrete Saw (hand-guided); Concrete Cutting Torch; Drill Doctor and/or Air Tool Repairman; Gunman and Mixerman (Gunite)

Group 7: Gunite Nozzleman or Rodman; Scaler (Drillers); Form Setter and/or Builder; Welders and/or Pipe Layers, installing process piping; Drillers, Joy Mustang, PR 143, 220 Gardner-Denver, Hydrasonic; Powder Man

LABORERS (Cont'd)  
(Tunnel and Shaft Workers)

Group 1: Bull Gang, Muckers, Trackman; Dumpmen; Concrete Crew (includes Rodders and Spreaders); Grout Crew; Swamper (Brakeman and Switchmen on tunnel work); Change House Man

Group 2: Nipper; Chucktender, Cabletender; Vibratorman, Jackhammer, Pneumatic Tools (except Driller)

Group 3: Grout Gunman

Group 4: Timberman, Retimberman - wood or steel blaster, Driller, Powderman; Cherry Pickerman; Powderman - Primer; House; Steel Form Raiser and Setter; Kemper and other pneumatic concrete Placer Operator; Miner - Finisher; Miners - Tunnel (hand or machine)

Group 5: Diamond Drill

Group 5A: Shaft and Raise Miner Welder

RM-11



**POWER EQUIPMENT OPERATORS (Cont'd)**  
**(Except Piledriving and Steel Erection)**

Group 5: Aggregate Plant Operator (including Crushing, Screening and Sand Plants, etc.); Asphalt Laydown Machine Operator; Asphalt Plant Mixer Operator; Beltcrete Operator; Boring Machine Operator; Concrete Mechanical Tamping, Spreading or Finishing Machine (including Clary, Johnson or similar types); Concrete Pump Operators; Concrete Batch Plant Operator, all types and sizes; Conductor, Brakeman or Handler; Drilling Machine; Elevating Grader Operator, all types and sizes (except as otherwise classified); Highline Cableway Signalman; Field Equipment Serviceman; Kolman Belt Loader Operator or similar with belt width 48" or over; Locomotive Engineer (including Dinky, 20 tons wt. and over); Moto-paver and similar type equipment Operator; Operating Engineer Rigger; Pneumatic-tired Scraper Operator (Turnapull, Euclid, Cat, D-W, Hancock and similar equipment) up to and including 12 cu. yds.; Power Jumbo Form Setter Operator; Pressure Grout Machine Operator (as used in heavy engineering construction); Road Oil Mixing Machine Operator; Roller Operator, on all types asphalt pavement; Self-propelled Compactor, with blade; Skip Loader Operator, all types rated capacity over 1½ but less than 4 cu. yds.; Slip Form Operator (power driven lifting device for concrete forms); Soil Cement Road Mixing Machine Operator, single pass type; Stationary Central Generating Plant Operator, rated 300 K.W. or more; Surface Heater and Planer Operator; Traveling Pipewrapping Machine Operator

Group 5-A: Heavy-duty Mechanic and/or Welder; Pneumatic-tired Scraper, all sizes and types over 12 cu. yds. up to and including 45 cu. yds. MRC (Turnapull, Euclid, Cat, D-W, Hancock and similar equipment); Tractor Operator (Pusher, Bulldozer, Scraper) up to 400 net horsepower rating; Trenching Machine Operator

**POWER EQUIPMENT OPERATORS (Cont'd)**  
**(Except Piledriving and Steel Erection)**

Group 6: Auto Grade Machine (CMI and similar equipment); Boring Machine Operator (including Mole, Badger and similar type); Concrete Mixer Operator, paving type, and Mobile Mixer; Concrete Pump Operator with boom attachment (truck mounted); Crane Operator, Crawler and pneumatic type, under 100 ton capacity MRC; Crawler type Tractor Operator, with boom attachment or slope bar; Derrick Operator; Forklift Operator for hoisting personnel; Grade-all Operator; Helicopter Hoist; Highline Cableway Operator (less than 20 tons rated capacity); Mass Excavator Operator (150 Bucyrus Erie and similar types); Mechanical Hoist Operator (two or more drums); Motor Grade Operator, any type power blade; Motor Grade Operator with elevating grader attachment; Mucking Machine Operator; Overhead Crane Operator; Piledriver Engineer (portable, stationary or skid rig); Pneumatic-tired Scraper Operator, all sizes and types (Turnapull, Euclid, Cat, D-W, Hancock and similar equipment over 45 cu. yds., MRC); Power driven Ditch Lining or Ditch Trimming Machine Operator; Skip Loader Operator, all types with rated capacity 4 cu. yds., but less than 8 cu. yds.; Slip Form Paving Machine Operator (including Gunnert, Zimmerman and similar types); Specialized Power Digger Operator, attached to wheel-type Tractor; Tower Crane (or similar type) Operator; Tractor Operator (Pusher, Bulldozer, Scraper) (400 net horsepower and over); Tugger Operator (two or more); Universal Equipment Operator, Shovel, Backhoe, Dragline, Clamshell, etc., up to 8 cu. yds.

Group 7: Crane Operator, Pneumatic or Crawler (100 ton hoisting capacity and over MRC rating); Helicopter Pilot, FAA qualified, when used in construction work; Highline Cableway Operator, over 20 ton rated capacity and using Traveling Head and Tail Tower; Remote-control Earth Moving Equipment Operator; Skip Loader Operator, all types with rated capacity of 8 cu. yds. or more; Universal Equipment - Shovel, Backhoe, Dragline, Clamshell, etc., 8 cu. yds. and over

**TRUCK DRIVERS:**

	Basic Hourly Rates	Basic Hourly Rates	Fringe Benefits Payments			
			H & W	Pensions	Vacation	Education and/or Appr. Tr.
Group 1	\$11.105	\$ 9.23	.92	\$1.10		.08
Group 2	11.245	9.37	.92	1.10		.08
Group 3	11.485	9.61	.92	1.10		.08
Group 4	11.865	9.99	.92	1.10		.08
Group 5	12.035	10.16	.92	1.10		.08
Group 5A	12.235	10.36	.92	1.10		.08
Group 6	12.385	10.51	.92	1.10		.08
Group 7	12.825	10.95	.92	1.10		.08
Group 8	13.38	11.505	.92	1.10		.08
Group 8A	14.085	12.21	.92	1.10		.08
Group 8B	11.715	9.84	.92	1.10		.08
Group 8C	13.755	11.88	.92	1.10		.08

**NORTHERN AREA:**

Area north of a straight line drawn between a point 35 miles due north of the City Hall in Flagstaff and an point 35 miles due north of the City Hall in Kingman, extending to the Arizona/Nevada State Line on the west, and connecting to a point 35 miles due north of the City Hall in Holbrook, thence due east to the intersection of the Arizona/New Mexico State Line

**CENTRAL and SOUTHERN AREAS:**

All Areas not included in the Northern Area

**TRUCK DRIVERS**

- Group 1: Teamsters; Pick-ups; Station Wagons; Man Haul Driver
- Group 2: Dump or Flatrack (2 or 3 axle); Water Truck (under 2500 gallons); Buggyobile (1 cu. yd. or less); Bus Drivers; Self-propelled Street Sweeper
- Group 3: Dump or Flatrack (4 axle); Dumptor or Dumpster (less than 7 cu. yds.); Water Truck (2500 gallons but less than 4000 gallons); Tireman
- Group 4: Dumptor or Dumpster (7 cu. yds. but less than 16 cu. yds.); Dump or Flatrack (5 axle); Water Truck (4000 gallons and over); Slurry type equipment or Leverman; Vacuum Pump Truck Drivers; Flaherty Spreader or similar type equipment or Leverman; Transit Mix (8 cu. yds. or less mixer capacity); Warehouseman and/or Warehouse Clerk; Ambulance Driver
- Group 5: Dump or Flatrack (6 axle); Transit Mix (over 8 cu. yds. but less than 10.5 cu. yds.); Rock Truck (i.e. Dart, Euclid and other similar type end dumps, single unit) less than 16 cu. yds.
- Group 5-A: Oil Tanker or Spreader and/or Bootman, Retortman or Leverman
- Group 6: Transit Mix (over 10.5 cu. yds. but less than 14 cu. yds. mixer capacity); Ross Carrier, Fork Lift or Lift Truck; Hydro Lift, Swedish Crane, Iowa 300 and similar types; Concrete Pump (when integral part of Transit Mix Truck); Dump or Flatrack (7 axle); Transport Driver (unless axle rating results in higher classification)
- Group 7: Dump or Flatrack (8 axle)
- Group 8: Off-highway equipment driver including but not limited to: 2 or 4 wheel power unit, i.e. Cat, DW Series, Euclid, International and similar type equipment, transporting material when top loaded or by external means including pulling Water Tanks, Fuel Tanks or other applications under Teamster classifications; Rock Trucks (Dart, Euclid, or other similar end dump types) 16 cu. yds. and over; Eject-alls; Dumptor or Dumpster (16 cu. yds. and over); Dump or Flatrack (9 axle)
- Group 8-A: Heavy-duty Mechanic/Welder; Body and Fender Man
- Group 8-B: Field Equipment Serviceman or Fuel Truck Drivers
- Group 8-C: Heavy-duty Mechanic/Welder Tender

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR, 5.5 (a) (1) (ii)).

RW-14

Federal Register / Vol. 45, No. 116 / Friday, June 13, 1980 / Notices

**SPECIFICATIONS**

for

**INDIAN BEND WASH**

**INTERCEPTOR CHANNEL**

**MARICOPA COUNTY, ARIZONA**

**GILA RIVER BASIN, ARIZONA**

Appropriation: 96x3122 Construction General  
Corps of Engineers, Civil

96x8862 Contributed Funds, Other

**U S Army Engineer District  
Los Angeles  
Corps of Engineers**



T A B L E O F C O N T E N T S

PART I SPECIAL PROVISIONS

PART II TECHNICAL PROVISIONS

<u>Section</u>	<u>Title</u>
1A	General Requirements
1B	Measurement and Payment
1D	Environment Protection
2A	Diversion and Control of Water
2B	Clearing Site and Removing Obstructions
2C	Excavation
2E	Fills and Subgrade Preparation
2H	Prime Coat and Weed Killer
2I	Asphalt Concrete
2J	Stone Protection
3A	Concrete
3B	Grouting Stone Protection
3C	Pneumatically Placed Concrete
5A	Miscellaneous Metalwork and Materials
8A	Steel Doors and Frames
8C	Hardware; Builders
10A	Station Marking

PART I

SPECIAL PROVISIONS

Index

- |  |                                       |
|--|---------------------------------------|
| 1. Commencement Prosecution and Completion of Work | 8. Quantity Surveys                   |
| 2. Liquidated Damages                              | 9. Damage to Work                     |
| 3. Contract Drawings, Maps and Specifications      | 10. Performance of Work by Contractor |
| 4. Contractor Submittals                           | 11. Contractor Quality Control        |
| 5. Physical Data                                   | 12. Progress Schedule                 |
| 6. Salvage Materials and Equipment                 | 13. Deleted                           |
| 7. Layout of Work                                  | 14. Time Extension                    |
|  | 15. Continuing Contracts              |
|  | 16. Approved Aggregate Sources        |

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (1965 JAN). The Contractor will be required to commence work under this contract within 5 calendar days after the date of receipt by him of notice to proceed, to prosecute said work diligently, and to complete the entire work ready for use not later than 31 January 1981. The time stated for completion shall include final clean-up of the premises.

1.1 The foregoing completion date is based on the assumption that the successful bidder will receive the notice to proceed by 2 October 1980. The Government will extend the completion date by the number of calendar days after the above date that the Contractor receives the notice to proceed, except to the extent that the delay in issuance of the notice to proceed results from the failure of the Contractor to execute the contract and give the required performance and payment bonds within the time specified in the bid. (1968 APR)

1.2 Completion of Channel Improvement and Appurtenant Work. Subject to the provisions of the paragraph entitled "Public Utilities, Notices, and Restrictions," of the section entitled "General Requirements," the Contractor shall complete pertinent parts of the entire work as specified below.

1.2.1 Interceptor Channel Construction. The Contractor shall complete the Interceptor channel ready for flood control use prior to start of spillway construction. Flood control use is defined as having completed all work within the channel and below the top of the channel ready for floodflows.

1.2.2 Arizona Canal Construction. The Contractor shall complete the Arizona Canal Lining ready for flood control use not later 30 calendar days after the date on which flow in the canal is stopped by others. Flow is scheduled to be stopped on on Friday 14 November 1980 at 12:00 midnight. Flow is scheduled to start at 12:00 midnight Saturday 13 December 1980.

2. LIQUIDATED DAMAGES (1965 JAN). In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as liquidated damages, pursuant to the clause of this contract entitled "Termination for Default-Damages for Delay-Time Extensions," the sums of \$170.00 for each day of delay.

3. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS (1965 JAN).

3.1 Ten sets of large scale contract drawings, maps and specifications will be furnished the Contractor without charge, except applicable publications incorporated into the Technical Provisions by reference. Additional sets will be furnished on request at the cost of reproduction. The work shall conform to the following contract drawings and maps, all of which form a part of these specifications and are available in the office of the U.S. Army Engineer District, Los Angeles, 300 North Los Angeles Street, Los Angeles, California.

Drawing No.

(District File No.)

Title

244/112	Index to Contract Drawings
244/113	Project Location
244/114	Foundation Investigation Sta 74+83 to Sta 49+41
244/115	Foundation Investigation Sta 49+41 to Sta 3+03.36
244/116	General Plan No 1, Sta 74+83 to Sta 58+50
244/117	General Plan No 2, Sta 58+50 to Sta 43+50
244/118	General Plan No 3, Sta 43+50 to Sta 29+00
244/119	General Plan No 4, Sta 29+00 to Sta 16+00
244/120	General Plan No 5, Sta 16+00 to Sta 3+03.36
244/121	Cross Sections
244/122	Spillway and Arizona Canal Lining-Plan, Profile, Detail and Sections
244/123	Spillway and Pilot Channel-Sections and Details
244/124	Outlet Structure-Plan and Sections
244/125	Pipe Gate and Driveway Details
244/126	Recorder House and Gaging Station Details
244/127	Arizona Canal Lining, Plan and Profile No 1- Sta 83+00 to Sta 47+00
244/128	Arizona Canal Lining, Plan and Profile No 2- Sta 47+00 to Sta 10+00
244/129	Arizona Canal Lining, Cross Sections

3.2 Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

3.3 The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

#### 4. CONTRACTOR SUBMITTALS.

4.1 General. Reference is made to the General Provision entitled "Shop Drawings". The Contractor shall submit for approval all shop drawings, certificates of compliance and/or equipment lists called for under the various headings of these specifications. These drawings, certificates and lists shall be complete and detailed. If approved by the Contracting Officer, each copy of the drawings,

certificates, or lists will be identified as having received such approval by being so stamped and dated. The Contractor shall make any corrections required by the Contracting Officer. Unless otherwise specified in the Technical Provisions, the number of copies to be submitted shall be as stated herein. The Contractor shall complete ENG Form 4025, "Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificates of Compliance for Approval" and forward 6 copies of same with each set of shop drawings, certificates of compliance, or equipment lists submitted. Blank ENG Forms 4025 will be furnished by the Contracting Officer on request. Each shop drawing submitted for approval shall have, in the lower right hand corner just above the title, a white space 3 inches x 4 inches in which the Contracting Officer can indicate the action taken. Shop drawings for submittal shall be either blue line or black line prints on a white background. Blueprints are not acceptable. Each shop drawing, certificate of compliance, and/or equipment list shall be identified with the following information as applicable:

Contract Number  
Project Title and Location  
Subcontractor's Name  
Supplier's Name  
Manufacturer's Name  
Contract Specification and Paragraph Number  
Contract Drawing File Number

4.1.1 Contractor Certification. Each submittal of the shop drawings shall contain the following certification on the face of the ENG Form 4025 accompanying the submittal:

"I have reviewed the shop drawings in detail  
and they are correct and in strict conformance  
with the contract drawings and specifications  
except as otherwise explicitly stated.  
Authorized Prime Contractor Representative"

4.2 Shop Drawings and Materials Submittal Register. Within 15 calendar days after commencement of work under this contract, the Contractor shall submit a preliminary register showing all shop drawings, certificates of compliance, equipment lists, samples, and other data required to be submitted under the various headings of these specifications. The register shall be submitted in duplicate. The preliminary register shall show the submittal identification number, the type of submittal, and the description for all items to be submitted under this contract and, for all items needed prior to submittal of the Project Progress Schedule, the scheduled submittal date, approval need date, and the material/equipment need date shall also be included. The register shall be expanded to include all Contractor scheduled dates and shall be resubmitted within 15 calendar days after submittal of the project progress schedule. After original approval the register shall be updated to indicate actual dates, actions completed, and any additional submittals or resubmittals required, and two copies of all updated sheets shall be submitted on or before the fifteenth of each month. The register shall provide adequate time for review and approval of the submitted material and shall be coordinated with the construction progress schedule to assure that all equipment and materials will be available for incorporation into the work in accordance with approved schedule of construction operations. Payment for materials incorporated into the work will not be allowed until required approvals have been obtained.

4.3 Shop Drawings. The Contractor shall submit to the Contracting Officer for approval 10 copies of all shop drawings as called for under the various headings of these specifications. Nine sets of all shop drawings will be retained by the Contracting Officer and one set will be returned to the Contractor.

4.4 Certificates of Compliance (1969 MAY OCE). Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 6 copies. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

4.5 Resubmittals. If a submittal is returned for correction or is not satisfactory and is disapproved by the Contracting Officer, the Contractor shall resubmit the corrected material in the same quantity, as specified for the original submittal, for approval within 14 calendar days after receipt by him of the disapproved material.

#### 5. PHYSICAL DATA (1965 JAN).

5.1 General. Information and data furnished or referred to below are furnished for the Contractor's information. However, it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor.

5.2 The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys and test trenches.

5.3 Weather Conditions. Meteorological information including rainfall and temperature data are available for inspection in the office of the District Engineer at 300 North Los Angeles Street, Los Angeles, California. Temperature statistics based on the National Weather Service, Phoenix, Arizona Sky Harbor International Airport weather station are as follows:

#### TEMPERATURE DATA (IN DEGREES FAHRENHEIT)

Month	Average Daily Maximum*	Average Daily Minimum*	Average*	Maximum**	Minimum**
January	65	38	52	88	16
February	69	42	56	89	22
March	75	46	61	97	25
April	83	53	68	104	32
May	92	60	76	113	40
June	102	69	85	117	50
July	104	78	91	118	61
August	102	76	89	117	60
September	98	69	84	118	47
October	87	57	72	105	34

November	75	45	60	92	25
December	66	39	52	88	22

\* Taken from Local Climatological Data - Annual Summary for Phoenix 1974.

\*\* Taken from Local Climatological Data - Annual Summary for Phoenix 1974 and from Climatography of the United States No. 80-2 supplement for 1951-1960.

5.3.1 Streamflow Conditions. Discharge frequency and flood hydrograph information are available for inspection in the office of the District Engineer, at 300 North Los Angeles Street, Los Angeles, California.

5.4 Transportation Facilities. The Southern Pacific Company serves the area adjacent to the site of the work. The Contractor shall investigate the availability of sidings and shall make all arrangements with the railroad company for any siding, spurs, or other facilities necessary for the delivery of materials to be used on the work. The Contractor shall make his own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the site of work. It shall be the Contractor's responsibility to construct and maintain at his own expense, any haul roads required for construction operations.

5.5 Additional Information, including but not necessarily limited to, results of laboratory tests of material encountered in test holes or other explorations and field logs is available for inspection and study in the office of District Engineer, Foundation and Materials Branch, 300 North Los Angeles Street, Los Angeles, California.

6. SALVAGE MATERIALS AND EQUIPMENT (1965 JAN). The Contractor shall maintain adequate property control records for all materials or equipment specified to be salvaged. These records may be in accordance with the Contractor's system of property control, if approved by the property administrator. The Contractor shall be responsible for the adequate storage and protection of all salvaged materials and equipment and shall replace, at not cost to the Government, all salvaged materials and equipment which are broken or damaged during salvage operations as the result of his negligence, or while in his care.

7. LAYOUT OF WORK (1965 APR OCE).

7.1 The Government will establish the following bench marks at the site of the work:

a. Bench Marks.

STATION	LOCATION	ELEVATION
C Int. of McDonald Drive and Granite Reef Road. N. 1/4 Cor. Sec. 13, T2N, R4E	At the C Int. of McDonald Drive, and Granite Reef Road, Fd. A 4" Bronze Disk, stamped, "Maricopa County Engr. Dept.", set in a well.	1268.082
C Int. of McDonald Drive and Pima Road. N.E. Cor.	At the C Int. of Pima Road and McDonald Drive, Fd. A	1268.99

Sec. 13, T2N, R4E	4" Bronze Disk, stamped, "City of Scottsdale", set in a well.	
Northbound Lane of Pima Road. E. 1/4 Cor. Sec. 12, T2N, R4E	In the Middle of the Northbound Lane of Pima Road, 90'+ North of Lincoln Drive, Fd. A 3" Bronze Disk, Stamped, "City of Scottsdale", and set in a well.	1283.219
Int. of Pima Road and Indian Bend Road, N.E. Cor. Sec. 12, T2N, R4E	On the C of Indian Bend Road in the middle of the North- bound Lane of Pima Road, Fd. A 4" Bronze Disk, Stamped, "City of Scottsdale", set in a well.	1290.313
C Indian Bend Road, N. 1/4 Cor. Sec. 12, T2N, R4E	In the Middle of Indian Bend Road, 0.5 mi. west of Pima Road. Approx. on line with the east property fence line at 8405 Indian Bend Road, Fd. A 1/2" iron pin set flush with pavement.	1285.298
C Indian Bend Road, N.W. Cor. Sec. 12, T2N, R4E	On the C of Indian Bend Road, 1.0 mi. west of Pima Road. On line with a fence bearing south. Fd. A 1/2" iron pin about 0.2' below surface.	1281.951
C Indian Bend Road. N. 1/4 Cor. Sec. 11, T2N, R4E	In the middle of Indian Bend Road, 0.5 Mi. East from Scottsdale Road. Fd. A 1/2" iron pin, 0.2' below surface.	1280.504
C Int. of Scottsdale Road and Indian Bend Road, N.W. Cor. Sec 11, T2N, R4E	At the C Int. of Scottsdale Road and Indian Bend Road. Fd. A 4" Bronze Disk stamped, "Maricopa County Eng. Dept."	1298.300

b. Necessary additional information relating to lines and grades will be made available to the Contractor.

7.2 From the information and bench marks established by the Government the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings, subject to such modifications as the Contracting Officer may require to meet changed conditions or as a result of necessary modifications to the contract work.

7.3 The Contractor shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the bench marks established by the Government. It

shall be the responsibility of the Contractor to maintain and preserve all stakes and other marks established by the Contracting Officer until authorized to remove them and if such marks are destroyed, by the Contractor or through his negligence prior to their authorized removal they may be replaced by the Contracting Officer, at his discretion, and the expense of replacement will be deducted from any amounts due or to become due the Contractor. The Contracting Officer may require that work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking of the work.

#### 8. QUANTITY SURVEYS (1979 MAR).

8.1 The Contractor shall make such surveys and computations as are necessary to determine the quantities of work performed or placed during each period for which a progress payment is to be made. The Contractor shall also make original and final surveys. The Government will make such computations as are necessary to determine the quantities of work performed or finally in place. Unless waived by the Contracting Officer in each specific case, quantity surveys made by the Contractor shall be made under the direction of a representative of the Contracting Officer.

8.2 All original field notes, computations and other records of the Contractor for the purposes of layout, original, progress and final surveys shall be furnished promptly to the representative of the Contracting Officer at the site of the work and shall be used by the Contracting Officer to the extent necessary in determining the proper amounts of progress and final payments. A copy of the original notes, computations and records furnished to the Contracting Officer shall be retained by the Contractor.

9. DAMAGE TO WORK (1966 MAR OCE). The responsibility for damage to any part of the permanent work shall be as set forth in the clause of the contract entitled "Permits and Responsibilities." However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor will make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work an equitable adjustment pursuant to Clause 3, Changes, of the contract, will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

10. PERFORMANCE OF WORK BY CONTRACTOR (1965 JAN). The Contractor shall perform on the site, and with his own organization, work equivalent to at least 35 percent of the total amount of work to be performed under the contract. If, during the progress of the work hereunder the Contractor requests a reduction in such percentage and the Contracting Officer determines that it would be to the Government's advantage, the percentage of the work required to be performed by the Contractor may be reduced; provided, written approval of such reduction is obtained by the Contractor from the Contracting Officer.

11. CONTRACTOR QUALITY CONTROL. The Contractor shall provide and maintain an effective quality control program that complies with the clause of the contract entitled "Contractor Inspection System."

11.1 The Contractor shall establish a quality control system to perform sufficient inspection and tests of all items of work, including that of his subcontractors, to ensure conformance to applicable specifications and drawings with respect to the materials, workmanship, construction, finish, functional performance, and identification. This control will be established for all construction except where the Technical Provisions of the contract provide for specific Government control by inspections, tests or other means. The Contractor's control system will specifically include the surveillance and tests required in the Technical Provisions of the contract specifications.

11.2 The Contractor's quality control system is the means by which he assures himself that his construction complies with the requirements of the contract plans and specifications. The controls shall be adequate to cover all construction operations and should be keyed to the proposed construction sequence.

11.3 The Contractor's job supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance, special technicians, or testing facilities to provide capability for the controls required by the Technical Provisions of the specifications. Prior approval is required for facilities, equipment, and personnel used by the Contractor in performing the specified tests.

11.4 After the contract is awarded and before construction operations are started, the Contractor shall meet with the Contracting Officer, or his representative, and discuss quality control requirements. The meeting shall develop mutual understanding relative to details of the system, including the forms to be used for recording the quality control operations, inspections, administration of the system, and the interrelationship of Contractor and Government inspection.

11.5 The Contractor shall submit for approval within 10 days after the receipt of the Notice to Proceed a quality control plan which shall include the procedures, instructions, and reports to be used. This document will include as a minimum:

- (1) The quality control organization.
- (2) Number and qualifications of personnel to be used for this purpose.
- (3) Authority and responsibilities of quality control personnel.
- (4) Methods of quality control including that for his subcontractor's work.
- (5) Test methods including, as specified, name of qualified testing laboratory to be used.
- (6) Method of documenting quality control operation, inspection, and testing.
- (7) A copy of a letter of direction to the Contractor's representative responsible for the quality control, outlining his duties and responsibilities, and signed by a responsible officer of the firm.

11.6 Unless specifically authorized in writing no construction shall be started until the Contractor's quality control plan is approved.

11.7 All compliance inspection will be recorded on an approved form, including but not limited to the specific items required in the Technical Sections of the Specifications. This form, to include records of corrective action taken, will be furnished to the Government as required by the Contracting Officer.

11.8 If recurring deficiencies in an item or items indicate that the quality control system is not adequate, such corrective actions will be taken as directed by the Contracting Officer.

11.9 In the event the Contractor fails to satisfactorily perform any required inspections and tests; to submit timely, complete, and factual reports and test data; or otherwise comply with the quality control provisions, the Contracting Officer may provide these services from another source and all costs for providing these services will be deducted from payments due the Contractor.

## 12. PROGRESS SCHEDULE.

12.1 Reference is made to the General Provision entitled "Progress Charts and Requirements for Overtime Work."

12.2 The Progress schedule shall provide for a uniform rate of progress throughout the entire construction period. Actual progress shall be entered on the schedule weekly. The determination of whether or not the work is behind schedule will be based upon a uniform rate of production in each feature of the work. Falling more than 5 calendar days behind the approved progress schedule in any feature of the work shall constitute sufficient grounds for a determination that the Contractor has fallen behind the progress schedule. Failure of the Contracting Officer to act under this provision shall in no way relieve the Contractor of the responsibility for completion of the work on schedule.

## 13. DELETED.

14. TIME EXTENSION (1965 JAN). Notwithstanding any other provisions of this contract it is mutually understood that the time extensions for changes in the work depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages pursuant to the new completion schedule.

## 15. CONTINUING CONTRACTS (1977 OCT OCE).

15.1 This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U.S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract.

15.2 The sum of \$1,000 has been reserved for this contract and is available for payments to the Contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds will be reserved for this contract.

15.3 Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not entitle the Contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs 15.6, 15.7, 15.8 and 15.9 below. No such failure shall constitute a breach of this contract, except that this provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefor.

15.4 The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The Contracting Officer will promptly notify the Contractor in writing of any additional funds reserved for the contract.

15.5 If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the Contractor shall give written notice to the Contracting Officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under the contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

15.6 No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The Contractor shall be entitled to simple interest on any payment that the Contracting Officer determines was actually earned under the terms of the contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, for the Renegotiation Board, as in effect on the first day of the delay in such payment.

15.7 Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the Contractor to any price adjustment under the "Suspension of Work" clause or in any other manner under this contract.

15.8 An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

15.9 If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the Contractor, by written notice delivered to the Contracting Officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.

15.10 If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due

the Contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the Contractor, to reduce said reservation by the amount of such excess.

16. APPROVED AGGREGATE SOURCES (1965 APR OCE).

16.1 Concrete Aggregates meeting the requirements of these specifications can be produced from the approved sources listed below.

16.1.1 Commercial sources along the Salt River near Phoenix, Arizona.

16.1.2 Commercial sources along the Agua Fria River near Luke Air Force Base.

16.2 Concrete Aggregate may be furnished from any of the above listed sources or at the option of the Contractor may be furnished from any other source designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated.

16.3 After the Award of the Contract, the Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish aggregates. If the Contractor proposes to furnish aggregates from a source or from sources not listed above, he may designate only a single source or single combination of sources for aggregates. Samples for acceptance testing shall be provided as required by section: CONCRETE of the "Technical Provisions". If a source for coarse or fine aggregate so designated by the Contractor is not approved for use by the Contracting Officer, the Contractor may not submit for approval other sources but shall furnish the coarse or fine aggregate, as the case may be, from an approved source listed above at no additional cost to the Government.

16.4 Approval of a source of concrete aggregate is not to be construed as approval of all materials from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for concrete aggregate as determined by the Contracting Officer. Materials produced from an approved source shall meet all the requirements of section: Concrete of the "Technical Provisions" of these specifications.

\* \* \* \* \*

PART II

TECHNICAL PROVISIONS

SECTION 1A

GENERAL REQUIREMENTS

Index

- |   |   |
|---|---|
| 1. Applicable Publications                        | 8. Salvage Materials                                    |
| 2. Project Facilities                             | 9. Archeological Findings During Construction           |
| 3. Construction Signs                             | 10. Public Utilities, Notices, and Restrictions         |
| 4. Project Engineer's Office and Laboratory       | 11. Public Safety                                       |
| 5. Bulletin Board                                 | 12. Occupational Safety and Health Act (OSHA) Standards |
| 6. Maintenance and Disposal of Project Facilities | 13. Quality Control                                     |
| 7. Scrap Material                                 |   |

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

1.1 Federal Specifications (Fed. Spec.).

FF-B-575C	Bolts, Hexagon and Square
FF-N-105B & Int. Am-4	Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
FF-N-836D & Am-1	Nut: Square, Hexagon, Cap, Slotted, Castle, Knurled, Welding, and Single Ball Seat
MM-L-751H	Lumber; Softwood
TT-E-529C & Am-2	Enamel, Alkyd, Semi-Gloss
TT-P-25E & Am-2	Primer Coating, Exterior (Undercoat for Wood, Ready-Mixed, White and Tints)

1.2 U.S. Department of Commerce National Bureau of Standards, Product Standard.

PS 1-74	Plywood, Construction and Industrial
---------	--------------------------------------

2. PROJECT FACILITIES. The Contractor shall construct and/or erect the following project facilities.

2.1 Construction Signs. The signs shall be erected as soon as possible and within 15 days after commencement of work under this contract.

- 2.1.1 Two project signs at locations designated by the Contracting Officer.
- 2.1.2 Warning Signs facing approaching traffic on all haul roads crossing under overhead power transmission lines.
- 2.1.3 Six hard hat signs at locations directed.
- 2.2 Project Engineer's Office and Laboratory, including a fenced parking area and a flagpole.
- 2.3 Bulletin Board at the Contractor's office.
- 2.4 Sanitary Facilities.

### 3. CONSTRUCTION SIGNS.

#### 3.1 Materials.

3.1.1 Lumber shall conform to Fed. Spec. 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).

3.1.2 Plywood shall conform to Product Standard PS 1, grade A-C, Group 1, exterior type.

3.1.3 Bolts, Nuts and Nails. Bolts shall conform to Fed. Spec. FF-B-575, nuts shall conform to Fed. Spec. FF-N-836, and nails shall conform to Fed. Spec. FF-N-105.

3.1.4 Paints and Oils. Paints shall conform to Fed. Spec. TT-P-25 for primer and TT-E-529 for finish paint and lettering.

#### 3.2 Construction.

3.2.1 Project and hard hat signs shall be constructed as detailed on Figures 1, 1A, 2, and 3. Decals and safety signs will be furnished by the Contracting Officer.

3.2.2 Warning Signs shall be constructed of plywood not less than 1/2 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, all letters shall be 4 inches in height, and the wording shall be: "WARNING: OVERHEAD TRANSMISSION LINES."

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.

### 4. PROJECT ENGINEER'S OFFICE AND LABORATORY.

4.1 General. The Contractor shall provide a suitable office trailer and a laboratory building for the Project Engineer. The exact site will require the Contracting Officer's approval. Both the trailer and the building shall be adequately heated, well lighted, suitably ventilated, and cooled with an exterior mounted, 1,000 cubic feet per minute minimum size, pad-type evaporative cooler,

complete, with all piping and electrical connections. An adequate supply of cooled drinking water shall be furnished and maintained. Open parking space for 6 vehicles and water and sanitary facilities shall be located convenient to the office and laboratory. The combined parking and building area shall be enclosed with a woven wire fence approximately 6 feet high with a 10-foot wide lockable gate accessible from a road or street. The fenced area shall be of sufficient size to permit ease in the parking of vehicles. Materials for the facilities need not be new provided they are adequate for the intended use.

4.2 Office Trailer shall be approximately 10 feet wide by 40 feet in length.

4.3 Laboratory Building shall be weathertight and shall have a 6-inch concrete slab floor and contain not less than 400 square feet of floor area. The laboratory shall be equipped with water supply, a sink approximately 20 x 35 x 8 inches, and the usual utilities.

4.4 Flagpole. The Contractor shall furnish and erect a flagpole at the Project Engineer's Office. The flagpole shall be either wood or sectional steel type, a product of a reputable manufacturer who has been regularly engaged in the manufacture of flagpoles. The flagpole shall be complete with standard fittings and equipment, including pulley, cleats, ground protector, halyards, and snap hooks. The pole shall have 20 feet exposed height and be set in concrete foundation in conformance with the manufacturer's recommendations. Painting of the wooden pole shall conform to the applicable requirements for the project sign. Steel pole shall be galvanized.

5. BULLETIN BOARD. 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.

6. MAINTENANCE AND DISPOSAL OF PROJECT FACILITIES. The Contractor shall maintain the project facilities in good condition throughout the life of the project. Upon completion of work under this contract, the facilities covered under this section will remain the property of the Contractor and shall be removed from the site at his expense.

7. 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 the 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.

8. SALVAGE MATERIALS. All materials and/or equipment removed and indicated to be either stored or reinstalled are designated as salvaged materials and/or equipment. Any salvaged materials and equipment which are excess upon completion of the work and are not indicated to be stored shall become the property of the Contractor.

9. ARCHEOLOGICAL 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 notifications will be a brief statement in writing giving the location and the 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.

## 10. PUBLIC UTILITIES, NOTICES, AND RESTRICTIONS.

10.1 General. The approximate location of all railroads, 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.

10.2 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 clause: PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS of the General Provisions. 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.

10.3 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.

10.4 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.

### 10.5 Notices.

10.5.1 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 14 days prior to start of work in the vicinity of their respective utilities:

City of Scottsdale  
Water and Sewer  
3939 Civic Center Plaza  
Scottsdale, Arizona 85251  
Mr. Joe Jason  
Telephone: (602) 994-2557

Arizona Public Service  
Metro Engineering Services  
501 South 3rd Avenue  
Phoenix, Arizona 85003  
Mr. Don Gammill  
Telephone: (602) 271-7676

Mountain Bell Telephone Co.  
1525 North Central Avenue  
Phoenix, Arizona 85004  
Mr. Jeff Weigandt  
Telephone: (602) 255-2675

10.5.2 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.

10.5.3 Optional Disposal Areas. The Contractor shall notify the Contracting Officer within 30 days after receipt of Notice to Proceed, as to which optional disposal areas he proposes to use or whether the areas will not be used for disposal. Should the Contractor elect to use any of the disposal areas, he shall indicate the approximate quantities of material he proposes to place in each area. In addition to the above requirements, the Contractor shall notify the Contracting Officer 24 hours in advance of the time he proposes to start operations in the optional disposal area, and 48 hours in advance of any work which he proposes to do in the disposal areas on Saturday, Sunday or legal holidays.

#### 10.6 Restrictions.

10.6.1 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.

11. PUBLIC SAFETY. Attention is invited to the general provision: 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 a hazard 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.

12. OCCUPATION SAFETY AND HEALTH ACT (OSHA) STANDARDS. The OCCUPATIONAL SAFETY and SAFETY and HEALTH ACT (OSHA) STANDARDS for CONSTRUCTION (Title 29, Code of Federal Regulations Part 1926 as revised from time to time) and the Corps of Engineers General Safety Requirements Manual, EM 385-1-1, are both applicable to this contract. The most stringent requirement of the two standards will be applicable.

13. QUALITY CONTROL. The Contractor shall inspect the work of his own forces and the work of all subcontractors for compliance with the contract requirements and record the results of the inspections. Legible copies of the daily inspection reports shall be maintained by the Contractor at the project site at all times and the original copies of the "Construction Quality Control Report" shall be delivered to the Contracting Officer on the work day following the date of the report.

13.1 Control of on-site construction. The Contractor's control shall include three phases of inspection for all definable features of work, as follows.

13.1.1 Preparatory inspection shall be performed prior to beginning any work on any definable feature of work. It shall include a review of contract requirements; a check to assure that all materials and/or equipment have been tested, submitted, and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed; and a physical examination of material and equipment to assure that they conform to approved shop drawings or submittal data and that all material and/or equipment are on hand.

13.1.2 Initial inspection shall be performed as soon as work begins on a representative portion of the particular feature of work and shall include examination of the quality of workmanship as well as a review of control testing for compliance with contract requirements.

13.1.3 Follow-up inspections shall be performed daily to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work.

13.2 The specified reports must be factual records of the Contractor's daily quality control activities and resulting actions. As such, they shall stress as major components of the report, the following:

(a) Phase(s) of construction underway during the time frame of the report. (i.e. earthwork, concrete work, structural steel erection, etc.)

(b) Phase (preparatory, initial, or follow-up), and locations of inspections and/or check tests that were made.

(c) Results of inspection, including nature of deficiencies observed and corrective actions taken or to be taken. If no inspections are listed on the report, it must be assumed that no inspections were made and that CQC is not being implemented.

(d) Report of tests performed, including those specified, with the results of the tests, including failures and remedial action to be taken. Test results, including all computations should be attached to the report form. Where test results cannot be completed by the time the report is submitted, a notation should be made that the test was performed and the approximate date test results will be available. Delayed test results should be submitted with the report form on the date received.

(e) Monitoring of materials and equipment upon arrival at the jobsite and prior to incorporation into the work for compliance with submittal approvals, damage and proper storage.

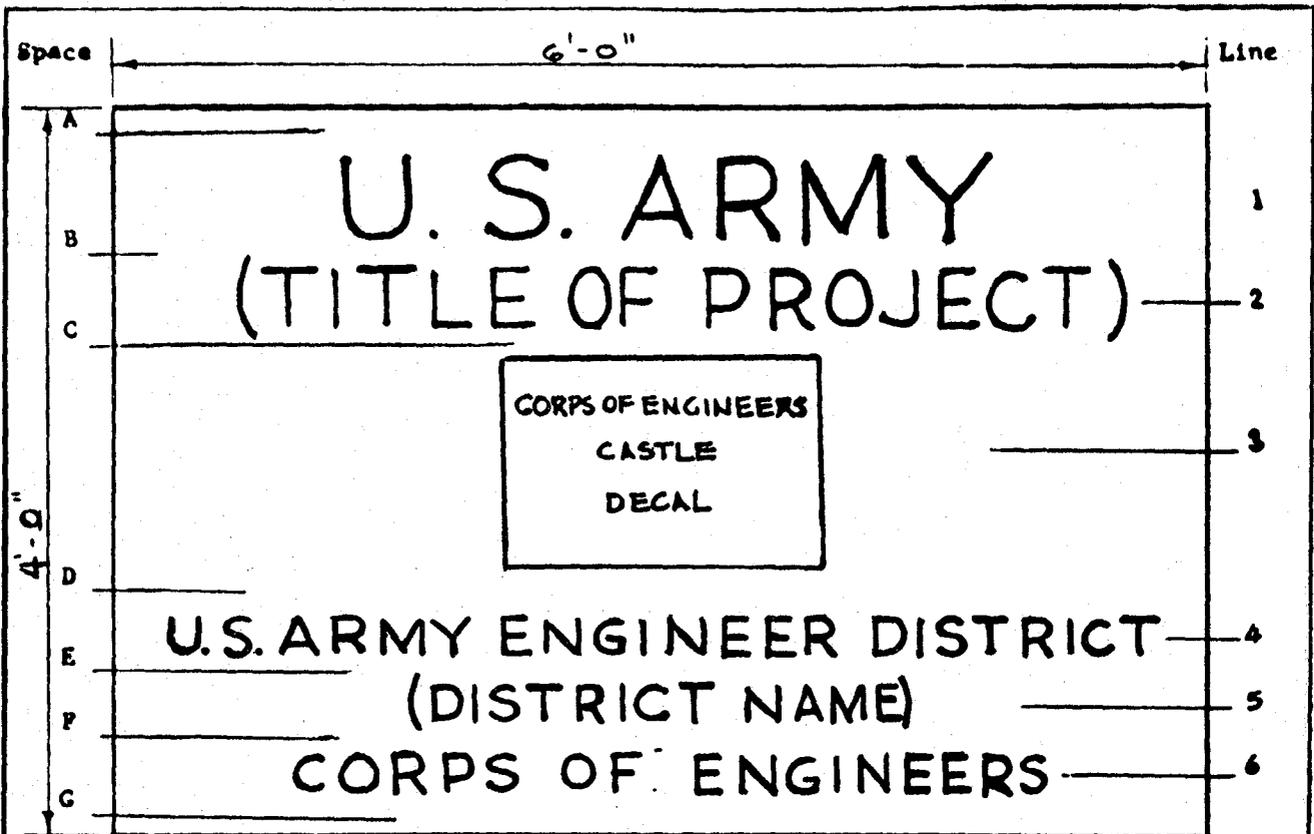
(f) Offsite surveillance activities.

(g) Job Safety.

13.3 The report must contain a record of inspections and tests for all work accomplished subsequent to the previous report. Separate reports in different phases of the work may be submitted by the responsible CQC inspectors or they may be combined into one consolidated report if all CQC activities and results are covered and the responsible CQC inspectors are indentified.

13.4 In all cases, the report or reports must be verified and signed by the one person delegated this responsibility by the Contractor. The verification should contain the statement that all supplies and materials incorporated in the work are in compliance with the terms of the contract except as noted.

\* \* \* \* \*



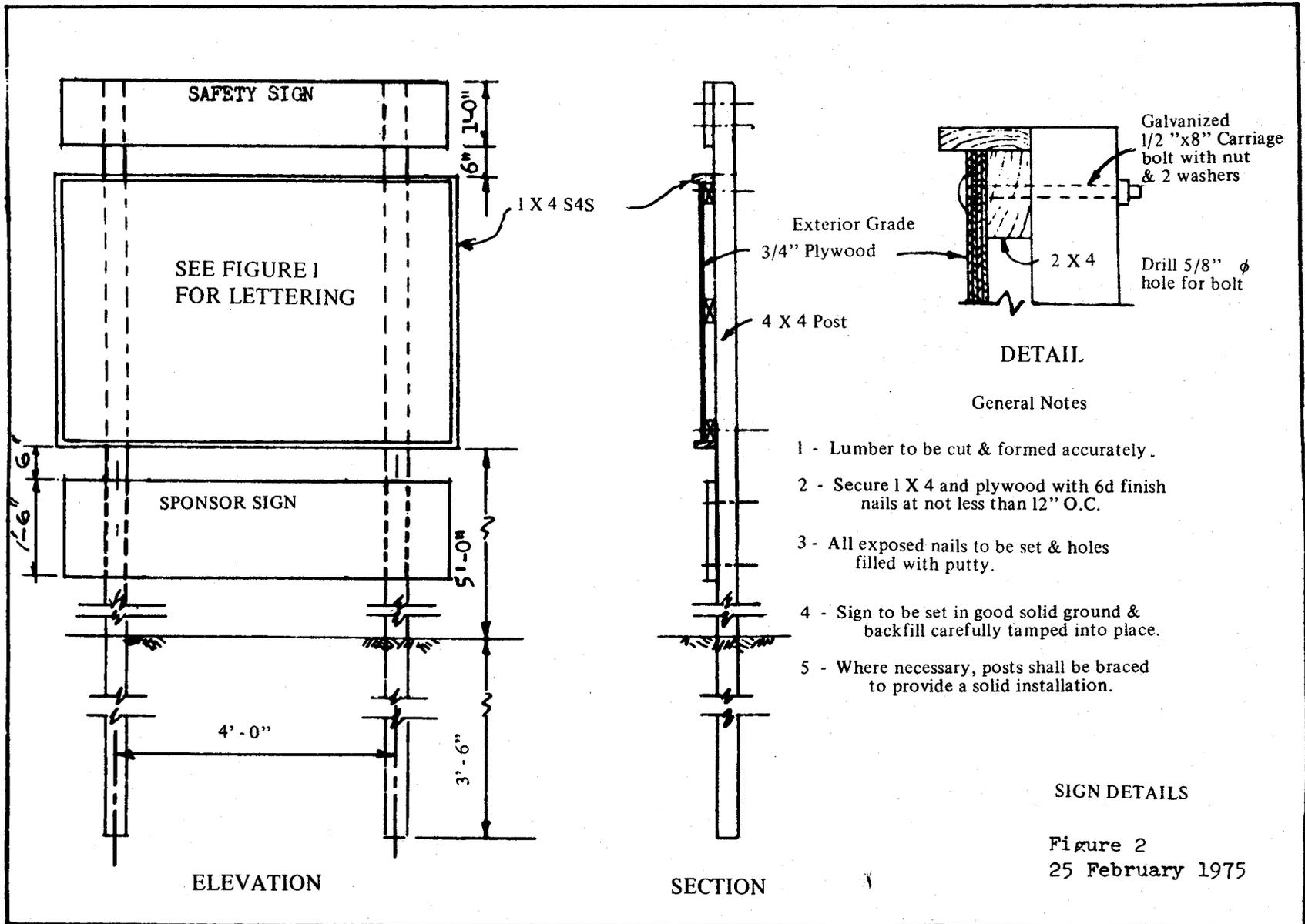
SCHEDULE

<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 1/4"	--
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



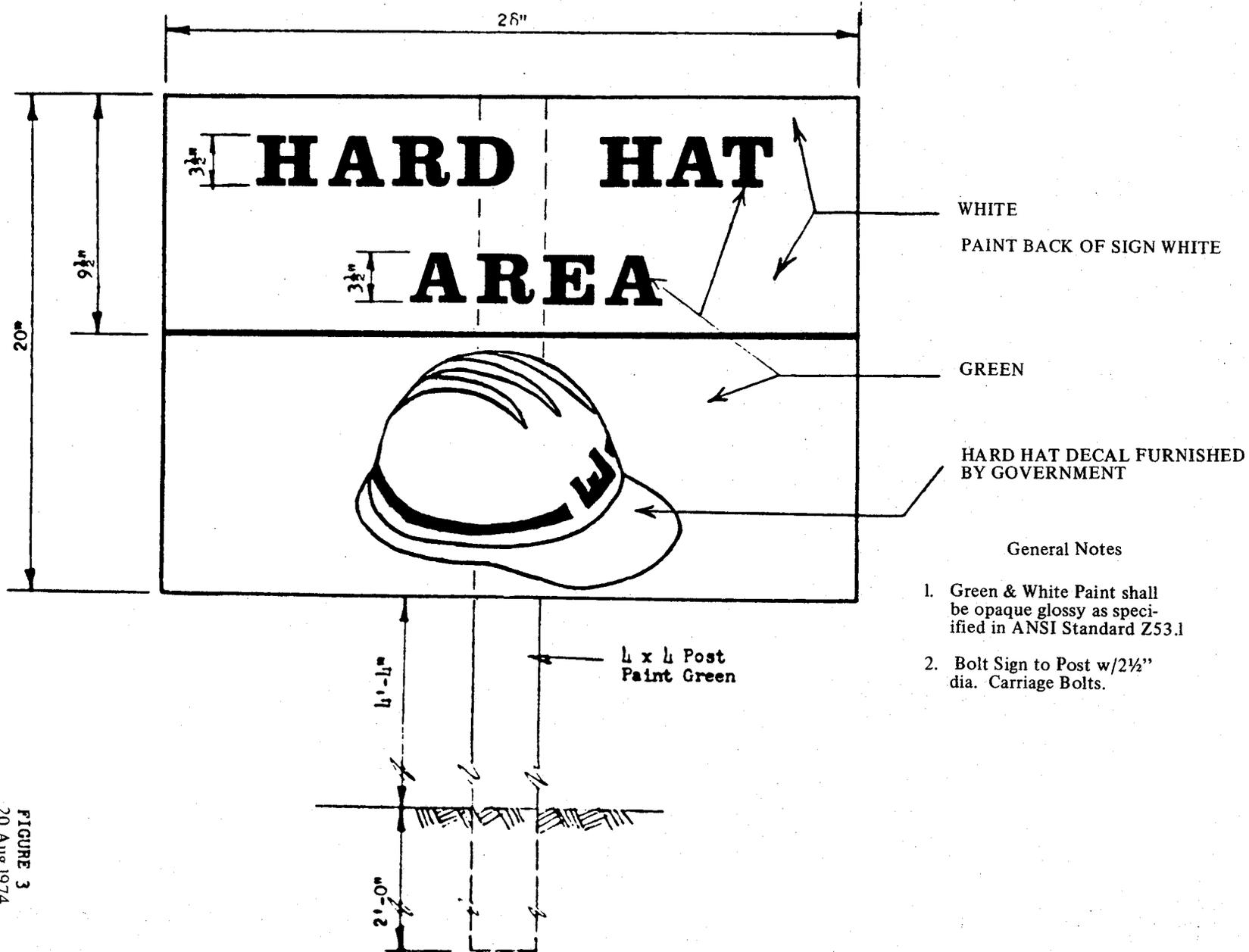


FIGURE 3  
20 Aug 1974

## SECTION 1B

### MEASUREMENT AND PAYMENT

#### Index

- |   |  |
|---|--|
| 1. Diversion and Control of Water             | 8. Grouting Stone Protection                 |
| 2. Clearing Site and Removing<br>Obstructions | 9. Asphalt Concrete Paving                   |
| 3. Excavation                                 | 10. Pipe Gate                                |
| 4. Fills                                      | 11. Station Marking                          |
| 5. Concrete                                   | 12. Gaging Station                           |
| 6. Concrete Driveway                          | 13. Concrete Protection, 8-Inch<br>Sewerline |
| 7. Stone Protection                           | 14. Adjust Manhole to Grade                  |

1. **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.

#### 2. CLEARING SITE AND REMOVING OBSTRUCTIONS.

2.1 **General.** Payment shall include all costs for clearing and removal work (except work by others) including all existing obstructions within the channel rights-of-way, and fill sites, and the obstructions indicated for removal outside of the rights-of-way and inside the construction easement. Except as otherwise specified, payment for clearing and removal work includes applicable earthwork; removing and plugging abandoned utility lines; removal of materials for salvage; protection of utilities and features indicated to remain; and the disposal of all materials.

2.2 Payment for Clearing Site and Removing Obstructions, will be made at the applicable contract price, which payment shall constitute full compensation for clearing, obstruction removal and protection work, complete.

#### 3. EXCAVATION.

##### 3.1 Measurement.

3.1.1 **Excavation.** A survey of the site shall be made prior to commencement of work, and all measurements will be based on this survey without regard to any changes in the site that may be made between the excavation lines and grades indicated on the drawings or staked in the field and the ground surfaces as indicated by the above mentioned surveys. The actual slopes as excavated may be greater or less than those indicated or staked, depending on the materials excavated and methods used in performing the work, but such alterations shall not change the measurement for payment from the original lines as specified herein. The quantity of directed excavation necessary for the removal of unsuitable foundation material as specified shall be included in the measurement of the excavation where the unsuitable soils are encountered. Quantities will be computed in cubic yards by the average end area method and the planimeter will be considered a precise instrument for measurement of plotted cross sections. All excavation outside of excavation lines shown on the drawings will be considered as being for the convenience of the Contractor.

### 3.2 Payment.

3.2 Payment for Excavation Channel will be made at the applicable contract price, which payment shall constitute full compensation for excavation and disposal of excavated materials, complete. This item includes the excavation for invert, and side slopes for Interceptor Channel, Arizona Canal, and side spillway, pavements, and appurtenant work.

3.2.2 Unsuitable Soils. No separate payment will be made for the excavation and disposal of unsuitable soils. When such excavation is directed, payment therefore will be included in the applicable contract price for the items of work under which the unsuitable soils are encountered. When there is no applicable contract item an adjustment will be made.

3.2.3 Excavation for Structures. No separate payment will be made for excavation for structures. All costs therefore shall be included in the applicable contract prices for the items to which the work applies.

3.2.4 Trenches. No separate payment will be made for excavation of utility and pipe trenches. All costs in connection therewith shall be included in the applicable contract prices for the items to which the work applies.

### 4. FILLS.

4.1 Measurement for payment for fills will be made between the excavation and structure lines and the fill limit lines, or between the ground lines and fill lines, as indicated on the drawings. 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.

### 4.2 Payment.

4.2.1 Payment for Fills of the various types will be made at the applicable contract price, which payment shall constitute full compensation for spreading, and compacting the fills, including preparation of the subgrades, and protection of slopes, and preparation of ground for fills.

4.2.2 Fill for Structures. No separate payment will be made for fill or backfill about structures. All such costs shall be included in the applicable contract prices for the items to which the work applies.

4.2.3 Trenches. No separate payment will be made for backfilling for utility and pipelines. All costs in connection therewith shall be included in the contract price for the items to which the work applies.

4.2.4 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 the items to which the work applies.

4.2.5 Backfill for directed overcut will be measured and paid for at the applicable contract price for the type of fill placed therein. When there is no applicable contract item, an adjustment in the contract price will be made.

### 5. CONCRETE.

5.1 Measurement of Concrete will be made on the basis of the actual volume of concrete within the pay lines of the channel side slopes, channel invert, and structures 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 or beveled edges or space occupied by metal work, electrical conduits or timber nor for 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 the measurement.

5.2 Payment for Concrete will be made at the applicable contract prices for the various items of the schedule, which payments shall constitute full compensation for labor, materials (including cement and reinforcement) and for all equipment and tools required to complete the concrete work. Embedded items shall be included in cost of the concrete except when other payment is specifically provided. No payment will be made for concrete, as such, which is placed in structures for which payment is made on a lump sum basis.

5.2.1 Payment for Concrete, Invert will be made at the applicable contract price, which payment shall constitute full compensation for all concrete placed in the channel invert.

5.2.2 Payment for Concrete, Side Slopes will be made at the applicable contract price, which payment shall constitute full compensation for all concrete placed in the channel side slopes.

5.2.3 Payment for Concrete, Spillway will be made at the applicable contract price, which payment shall constitute full compensation for all concrete placed in the side spillway structure, including access road near downstream end of spillway.

6. CONCRETE DRIVEWAY. Payment for Concrete Driveway will be made at the applicable contract price, which payment shall constitute full compensation for the actual number of driveways acceptably constructed, complete. Payment will include excavation, trenching, backfill, subgrade preparation, concrete work, cement, steel reinforcement and appurtenant work.

#### 7. STONE PROTECTION.

7.1 Measurement. The quantity of Stone Protection to be paid for will be the number of tons (2,000 pounds), determined by scale weights acceptably placed within the lines and grades indicated on the drawings or directed by the Contracting Officer.

7.2 Payment for Stone Protection will be made at the applicable contract price, which payment shall constitute full compensation for the stone protection, complete in place, except grouting of stonework for which separate payment is provided. Payment will include subgrade preparation, obtaining materials, placement and haul of salvaged material.

#### 8. GROUTING STONE PROTECTION.

8.1 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.

8.2 Payment for Grouting Stone Protection will be made at the applicable contract price, which payment shall constitute full compensation for all costs for grouting stone protection, including Portlant cement, placing and curing.

9. ASPHALT CONCRETE PAVING.

9.1 Measurement. The unit of measurement for the asphalt concrete will be the ton (2,000 lbs). The Contractor shall weigh each load on a certified platform scale and shall furnish the Contracting Officer with duplicate Weighmaster'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. The bituminous mixture shall be weighed after mixing and no deduction will be made for the weight of bituminous material incorporated therein. Asphalt concrete used for convenience of the Contractor will not be measured for payment.

9.2 Payment for Asphalt Concrete Paving will be made at the applicable contract price, which payment shall constitute full compensation for furnishing, spreading, and compacting the asphalt concrete surfacing complete in place, including weed killer, prime coat, tack coat, and all incidentals.

10. PIPE GATE. Payment for Pipe Gate will be made at the applicable contract price, per each, which payment shall constitute full compensation for the fabrication and installation of the pipe gate including concrete and earthwork.

11. STATION MARKING. Payment for Station Marking will be made for the applicable contract price, which payment shall constitute full compensation for obtaining materials, fabrication and installation necessary for the work, complete.

12. GAGING STATION. Payment for Gaging Station will be made at the applicable contract price, which payment shall constitute full compensation for the gaging station including recorder house, conduits and pull boxes, reinforced concrete weir, metalwork, carpentry, and earthwork, complete.

13. CONCRETE PROTECTION, 8-INCH SEWERLINE. Payment for Concrete Protection, 8-Inch Sewerline will be made at the applicable contract price, which payment shall constitute full compensation for protecting the 8-inch sewerline including premolded pad, concrete, cement, reinforcement, and applicable earthwork, complete.

15. ADJUST MANHOLE TO GRADE. Payment for Adjust Manhole to Grade will be made at the applicable contract price, which payment shall constitute full compensation for obtaining watertight frame and cover and acceptably installing at the new grade, complete.

\* \* \* \* \*

SECTION 1D

ENVIRONMENT PROTECTION

Index

- |  |   |
|--|---|
| 1. Scope   | 9. Protection of Water Resources  |
| 2. Reference   | 10. Protection of Fish and<br>Wildlife                                    |
| 3. General   | 11. Disposal of Cleared and<br>Grubbed Material and Other<br>Debris       |
| 4. Notification  | 12. Dust Control  |
| 5. Subcontractors  | 13. Maintenance of Pollution<br>Control Facilities During<br>Construction |
| 6. Implementation  |   |
| 7. Protection of Land Resources                                      |   |
| 8. Recording and Preserving<br>Historical and Archeological<br>Finds |   |

1. SCOPE. This section covers the furnishing of all labor, materials and equipment and performing all work required for the protection of the environment during construction operations except for those measures set forth in other Technical Provisions of these specifications.

2. REFERENCE. "Standard Methods for the Examination of Water, Sewage, and Industrial Wastes," Thirteenth Edition, 1971, published by American Public Health Association, 1015 Eighteenth Street, N.W., Washington, D.C. 20036.

3. GENERAL. For the purpose of this specification, environment protection is defined as the retention of the environment in its natural state to the greatest possible extent during project construction and to enhance the natural appearance in its final condition. Environment protection requires consideration of air, water, and land, and involves noise, solid waste-management and management of radiant energy and radioactive materials, as well as other pollutants. In order to prevent, and to provide for abatement and control of, any environmental pollution arising from the construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement.

4. NOTIFICATION. The Contracting Officer will notify the Contractor in writing of any noncompliance with the aforementioned Federal, State, or local laws or regulations. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. The Contractor shall, after receipt of such notice, immediately inform the Contracting Officer of proposed corrective action and take such action as may be approved. 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 any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor.

5. SUBCONTRACTORS. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

6. IMPLEMENTATION. Prior to commencement of the work the Contractor will:

(1) submit in writing his proposals for implementing this section for environment protection;

(2) meet with representatives of the Contracting Officer to develop mutual understandings relative to compliance with this provision and administration of the environment protection program.

Approval of the Contractor's plan for environment protection will not relieve the Contractor of his responsibility for adequate and continuing control of pollutants.

7. PROTECTION OF LAND RESOURCES.

7.1 General. The land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. The Contractor shall confine his construction activities to areas defined by the plans or specifications. The following additional requirements are intended to supplement the requirements of General Provisions 46-47, and 50.

7.2 Prevention of Landscape Defacement. Except in areas indicated on the plans or specified to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without the authority of the Contracting Officer. Ropes, cables, or guys shall not be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is permitted, it shall be performed in such a manner as to avoid damage to the trees. The Contractor shall in any event be responsible for any damage resulting from such use. Where the possibility exists that trees may be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or operations, the Contractor shall adequately protect such trees. Stone, earth or other material that is displaced into uncleared areas shall be removed. Monuments and markers shall be protected before construction operations commence.

7.3 Restoration of Landscape Damage. Any trees, shrubs, or other landscape features scarred or damaged by the Contractor's equipment or operations shall be restored to a condition satisfactory to the Contracting Officer. Restoration of scarred and damaged trees, shrubs, and other landscape features shall be performed in an approved manner by experienced workmen. Items damaged beyond restoration shall be removed and disposed of under requirements of clearing and grubbing. Trees and shrubs that are to be removed because of damage shall be replaced at the Contractor's expense by mature, acceptably grown, trees of the same species or a species approved by the Contracting Officer. The size and quality of all replacements shall also be approved by the Contracting Officer.

7.4 Location of Campsites, Storage and Housing Facilities. Contractor's camps, storage, and other construction buildings, located on Government property, which is required in the performance of the work, shall be located upon cleared portions of the jobsite or areas to be cleared, and shall require written approval of the Contracting Officer. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the

construction of buildings. Plans showing campsites, storage, and housing facilities shall be submitted for approval of the Contracting Officer. Where buildings or tent platforms are constructed on sidehills, the Contracting Officer may require cribbing to be used to obtain level foundations. Benching or leveling of earth may be permitted, depending on the location of the proposed facility.

7.5 Temporary Excavation and Embankments. If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval prior to scheduled start of such temporary work.

7.5.1 A layout of all temporary roads, excavations and embankments to be constructed within the work area.

7.5.2 A landscaping plan showing the proposed restoration of the area. The plan shall provide for the obliteration of construction scars as such and shall provide for a reasonably natural appearing final condition of the area. No unauthorized road construction, excavation or embankment construction (including borrow and disposal areas) will be permitted.

7.6 Post-Construction Cleanup or Obliteration. The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures or stockpiles of excess or waste materials, as directed by the Contracting Officer. The area will be restored to near natural conditions which will permit the growth of vegetation thereon. Except in specific cases, restoration to original contours will not be required, however, all restored areas shall be smoothly and evenly dressed and sloped to drain.

8. RECORDING AND PRESERVING HISTORICAL AND ARCHEOLOGICAL FINDS. All items having any apparent historical or archeological interest which are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall immediately report the find to the Contracting Officer so that the proper authorities may be notified.

#### 9. PROTECTION OF WATER RESOURCES.

9.1 General. The Contractor shall not pollute streams, lakes, water courses, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, insecticides, herbicides, or other harmful materials. The Contractor shall investigate and comply with all applicable Federal, State, county, and municipal laws concerning pollution of rivers and streams.

9.2 Erosion Control. Prior to any major construction the Contractor shall submit a plan for approval of the Contracting Officer showing his scheme for controlling erosion and disposing of wastes.

9.2.1 Surface drainage from cuts, and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures such as berms, dikes, drains, immediate seeding of cut and fill slopes, or sedimentation basins, if required to meet

the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed to any one time by construction operations should be held to a minimum. Stream crossings by fording with equipment shall be limited to control turbidity. Any temporary culverts or bridge structures shall be removed upon completion of the project. Fills and waste areas shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

9.3 Spillages. Special measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and concrete drainage from entering public waters.

9.4 Washing and Curing Water. Water used in embankment material processing, aggregate processing, concrete curing, foundation and concrete lift cleanup, and other waste waters shall not be allowed to reenter the water course if a significant increase in the turbidity of the water course will result therefrom. The Contractor shall remove from within the cofferdam all wash, curing and waste waters derived from sources either within or outside the cofferdam.

9.5 Disposal. Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in areas adjacent to streams shall not be permitted. If any waste material is dumped in unauthorized areas, the Contractor shall remove the material and restore the area to the original condition before being disturbed. If necessary, contaminated ground shall be excavated, disposed of as directed by the Contracting Officer, and replaced with suitable fill material, compacted and finished with topsoil and planted as required to reestablish vegetation.

10. PROTECTION OF FISH AND WILDLIFE. The Contractor shall at all times perform all work and take such steps required to minimize interference with or disturbance to fish and wildlife (refer to specific species as required). The Contractor will not be permitted to alter waterflows or otherwise disturb native habitat adjacent to the project area which, in the opinion of the Contracting Officer, are critical to fish or wildlife.

11. DISPOSAL OF CLEARED AND GRUBBED MATERIAL AND OTHER DEBRIS.

11.1 General. Disposal of cleared and grubbed materials shall conform to section: CLEARING SITE AND REMOVING OBSTRUCTIONS.

11.2 Burning: No burning will be permitted.

12. DUST CONTROL. The Contractor will be required to maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which would cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs. No separate or

direct payment will be made for dust control and the cost thereof shall be considered incidental to and included in the contract prices for excavation and embankments.

13. MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION. During the life of this contract, the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. During the construction period the Contractor should conduct frequent training periods on environment protection. The curricula should include methods of detecting and avoiding pollution; familiarity with pollution standards, both statutory and contractual; and installation and care of vegetative covers, plants and other facilities to prevent and correct environmental pollution.

\* \* \* \* \*

SECTION 2A

DIVERSION AND CONTROL OF WATER

1. REQUIREMENT.

1.1 General. All permanent construction shall be carried on in areas free from water. Water in varying quantities may be flowing in the work area at intermittent periods during the time allowed for completion of construction. Runoff from the watersheds is rapid and, during periods of rain, intermittent freshets may be expected. The responsibility of the Contractor for protection of work against waterflows is specified in paragraph: DAMAGE TO WORK of the SPECIAL PROVISIONS. At all locations where construction work is at a lower elevation than the elevation of the stream or ground water at the time of doing the work, suitable cofferdams or dikes, if necessary, shall be constructed, the construction area shall be dewatered prior to commencement of the work, and all subgrades, whether for earthfill, filter, stone, or concrete, shall be kept drained and free of water throughout the working period. Within 10 days after award of contract, the Contractor shall submit plans showing the methods he proposes to use to dewater each working area and control the water from rain, sheet flow and other surface water. The plans shall show the scheme of operations and a complete layout of drainage pipes, pumps, diversion channels, cofferdams, etc. The plans shall also take into consideration the following specific requirements.

1.2 By-Pass Capacities. From side drains and channel, 100 cfs.

\* \* \* \* \*

## SECTION 2B

### CLEARING SITE AND REMOVING OBSTRUCTIONS

#### Index

- |  |                              |
|--|------------------------------|
| 1. Requirements                                | 3. Protection and Support of |
| 2. Disposal of Cleared and Grubbed<br>Material | Utilities                    |

#### 1. REQUIREMENTS.

1.1 General. Except as otherwise specified, and/or indicated areas to be cleared and grubbed will be limited to actual excavation area or areas on which fills and/or structures are to be placed. The removal of trees, shrubs, turf, and other vegetation outside of these areas shall be held to a minimum and care shall be exercised not to damage any trees, shrubs, turf, or vegetation which can be left in place.

1.2 Existing Structures and Obstructions. The Contractor shall clear the site, including all fill and excavation areas, and remove and dispose of all existing structures and obstructions for channel and embankment construction, except as otherwise noted on the drawings. Obstructions which are designated or specified to be removed by others shall not be removed by the Contractor. Except as otherwise specified, obstructions designated to be removed by others will be removed in sufficient time to preclude interference with the Contractor's operations. Utility relocations are not considered obstructions. Except as otherwise specified, incombustible waste material, such as broken concrete, pavement, and other like materials shall be considered scrap and shall not be used in fills.

1.3 Clearing. Trees less than 1-1/2 inches in diameter and other vegetation, except as specified, shall be cut off 6 inches below the indicated subgrade or ground level whichever is lower. Other vegetation shall be cut off flush or slightly below the original ground surface. Clearing operations shall be conducted so as to prevent damage to trees, structures, and installations under construction, or to remain in place, and to provide for the safety of employees and others. All rubbish, waste dumps, and debris areas shall be cleared with the channel right of way and work areas.

1.4 Grubbing shall consist of removing all trees, stumps, roots, logs, and other objectionable vegetable matter in the required fills, foundation areas, and all excavation areas. In grubbing out stumps and roots, all roots or other timber more than 1-1/2 inches in diameter shall be removed to 3 feet below the depth of the required excavation or existing ground level, whichever is lower. Trees and stumps shall be pulled, not cut off.

1.5 Obstructions to channel construction, except as indicated shall be removed within limits of excavation for new channel construction.

1.6 Filling of Holes. Holes made by removal of obstructions and grubbing operations shall be refilled to subgrade with compacted fill material as specified in the section: **FILLS AND SUBGRADE PREPARATION.**

1.7 Utilities. Prior to removing an obstruction, all applicable utility relocation shall have been relocated.

1.8 Concrete in existing construction, which will join new concrete or new construction, shall be saw cut to a depth of 2 inches and the concrete shall be removed in a manner to provide plane surfaces to which new concrete shall be bonded, unless otherwise specified.

1.9 The removal of materials for salvage shall be performed in a manner to avoid damage to such materials and to portions of the existing work to remain in place. The Contractor has the option of furnishing new fastenings and fittings in lieu of salvaging such material. Such new materials shall be the equivalent of existing materials.

1.10 Existing Structures within the rights-of-way and to remain shall be protected and supported as necessary during removal and construction operations.

2. DISPOSAL OF CLEARED AND GRUBBED MATERIAL. All material removed, except material specified and/or indicated to be salvaged, is designated as scrap, shall become the property of the Contractor, and shall be removed from the site. Disposal shall comply with all applicable Federal, State, and local laws.

### 3. PROTECTION AND SUPPORT OF UTILITIES.

3.1 General. The Contractor shall adequately support and protect from damage all existing utilities which are located within, or below, or close to the construction area and which are to remain in place.

### 4. DISPOSAL AREAS.

4.1 General. Disposal Areas and Salt River Landfill Disposal Site may be used at the option of the Contractor for disposal of materials as specified hereinafter.

4.2 Haul Sites. Material placed in disposal shall be clean material conforming to the requirements for fills and embankments. Material may be placed in uniform layers not exceeding 60 inches in depth within limits as indicated. Compaction other than that obtained by controlled movement of the construction equipment will not be required.

4.3 SALT RIVER LANDFILL DISPOSAL SITE. Salt River Landfill Disposal Site is located approximately 6 1/2 miles from the project site near the intersection of McDowell Road and Phoenix-Payson Beeline Highway next to Salt River. Material shall consist of any unsuitable material pavement, or any organic and inorganic trash. The size or shape of the material to be disposed shall be such that no special handling is required. The operator will provide the Contractor, without charge, a weigh ticket for each acceptable load. Weigh tickets shall be presented by the Contractor to the Contracting Officer at the end of each days work. Person to contact is Mr. David Easchief, Salt River Landfill Project, Route 1- Box 216, Scottsdale, Arizona, Telephone (602) 949-7234.

\* \* \* \* \*

## SECTION 2C

### EXCAVATION

#### Index

- |                              |                                    |
|------------------------------|------------------------------------|
| 1. General                   | 5. Excavation for Pipelines        |
| 2. Blasting                  | 6. Removal of Unsatisfactory Soils |
| 3. Preservation of Property  | 7. Disposal of Excavated Materials |
| 4. Excavation for Structures | 8. Overcut                         |

1. **GENERAL.** Excavation shall consist of the removal of every type of material encountered except materials covered by the provisions of the section: **CLEARING SITE AND REMOVING OBSTRUCTION** in the designated areas or from areas directed. The material to be removed may include but is not limited to earth, hardpan, silt, clay, gravel, cemented sand and gravel, rock, adobe, detached pieces of stone and concrete, rock fills, existing fills of miscellaneous debris and rubbish, and other unsuitable materials. Slope lines indicated on the drawings for temporary cuts do not necessarily represent the actual slope to which the excavation must be made to safely perform the work. Excavation for permanent cuts shall be made to the slope lines indicated. Excavation shall be performed in a manner which will not impair the subgrade. Except as otherwise specified, the finish surface of subgrades shall be smooth and shall not vary more than 1/2 inch from indicated grade.

2. **BLASTING.** Blasting will not be permitted.

3. **PRESERVATION OF PROPERTY.** All excavation operations shall be conducted in such a manner that street pavements, sidewalks, curbs, utilities, or other facilities and improvements which are to remain in place permanently will not be subjected to settlement or horizontal movement. The Contractor shall furnish and install sheet piling, cribbing, bulkheads, shores, or whatever means may be necessary to adequately support material carrying such improvements or to support the improvements themselves and shall maintain such means in position until they are no longer needed. Temporary sheet piling, cribbing, bulkheads, shores or other protective means shall remain the property of the Contractor and when no longer needed shall be removed from the site.

4. **EXCAVATION FOR STRUCTURES.** Excavation within the vicinity of existing structures, utilities, and drainage pipes to remain in place shall be performed in a manner to prevent damage to the structure. Earth banks and facilities to remain in place shall be supported as necessary during excavation. In general, unless otherwise shown or specified, the actual side slopes will be at the Contractor's option.

5. **EXCAVATION FOR PIPELINES.** All excavations shall be made by open cut unless otherwise specified. The banks of trenches shall be kept as nearly vertical as practicable. Unless otherwise indicated, trenches shall be not less than 12 inches wider nor more than 16 inches wider than the outside diameter of the pipe to be laid therein, and shall be excavated true to line, so that a clear space not less than 6 inches nor more than 8 inches in width is provided on each side of the pipe. The trench be made as wide as necessary for sheathing and bracing; and the proper installation of the work. The bottom of trenches shall be accurately graded to provide uniform bearing and support for each section of the pipe at every point along its entire length, except for portions of the pipe sections where it is necessary to excavate for the proper sealing of pipe joints. If soft, spongy,

unsuitable material, or material which by reason of its nature cannot be properly shaped or finished to a true pipe subgrade is encountered, it shall be removed and replaced with compacted fill.

5.1 Electrical Conduits shall be buried directly in the earth as indicated with depth of cover over the top of the duct bank not less than 24 inches. The bottom of the trench shall be graded toward pull box, and shall be smooth and free of stones, soft spots, and sharp objects. Where bottom of trench comprises materials other than sand or stone-free earth, a 3-inch layer of sand, or stone-free earth shall be laid on the bottom of the trench and compacted to the approximate density of the surrounding firm soil before installing the conduits. The first layer of backfill cover shall be sand or stone-free earth, compacted as specified. The selected earth at the sides of the conduit shall be thoroughly tamped in 4- to 6-inch layers.

5.2 Joints of conduit shall be made up in accordance with the manufacturer's recommendations for the particular conduit and coupling selected and as approved by the Contracting Officer.

6. REMOVAL OF UNSATISFACTORY SOILS. The removal of soils which are unsatisfactory for foundations of the channel and structures may be required in certain areas. The Contractor will be required to excavate any such areas to the depth directed and backfill the areas with compacted fill conforming to the requirements of the section: FILLS AND SUBGRADE PREPARATION.

7. DISPOSAL OF EXCAVATED MATERIALS. Excavated materials suitable for required fills shall be placed in temporary stock piles or used directly in the work. All excess materials suitable for fills shall be placed in the indicated disposal areas. Excavated material not suitable for fills and unsatisfactory materials shall be disposed of in the Salt River landfill Disposal Site as specified in section: CLEARING SITE AND REMOVING CONSTRUCTION. No excavated materials or waste of any kind shall be disposed of at any place beyond the limits of the work under this contract without express authority. Prior to placing material, the disposal and stockpile areas shall be cleared of trash and vegetation. Vegetation shall be cut off at the existing ground line. Clearing shall conform to the applicable requirements of the section: CLEARING SITE AND REMOVING OBSTRUCTIONS. The stockpiles and disposal fills shall be placed in a manner to preclude ponding of water. Contractor shall furnish notice of his intentions in connection with the use of indicated disposal areas in accordance with the requirements of the paragraph: PUBLIC UTILITIES, NOTICES, and RESTRICTIONS of the GENERAL REQUIREMENTS.

8. OVERCUT. Except as otherwise specified or as may be ordered in writing, any overcut or excavation made outside the lines indicated on the drawings or directed shall be backfilled with compacted fill or concrete, and all excavating, backfilling, compacting of backfill, and concreting occasioned thereby shall be by the Contractor at no additional cost to the Government. Any overcut under bridge footings shall be backfilled with concrete.

\* \* \* \* \*

SECTION 2E

FILLS AND SUBGRADE PREPARATION

Index

- |  |                            |
|--|----------------------------|
| 1. Applicable Publications   | 4. Compacted Fill, Channel |
| 2. Equipment   | 5. Compacted Fill, Levee   |
| 3. General Requirements for Compacted<br>Fills and Compacted Backfills | 6. Backfills               |
|  | 7. Subgrade Preparation    |

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

1.1 American Society for Testing and Materials (ASTM) Standards.

D 698-78	Moisture-Unit Weight Relations of Soils and Soil-Aggregate Mixtures Using a 5.5-Lb. (2.5-Kg) Rammer and a 12-In. (304.8-mm) Drop
----------	--

D 1557-78	Moisture-Unit Weight Relations of Soils, Soils, and Soil-Aggregate Mixtures Using a 10-Lb. (4.5-Kg) Rammer and an 18-In. (457-mm) Drop
-----------	--

D 1556-64 (R 1974)	Density of Soil In Place by the Sand-Cone Method
--------------------	--

1.2 American Association of State Highway and Transportation Officials (AASHTO) Standards.

T 99-74	Moisture-Density Relations of Soils 5.5-Lb. (2.5 Kg) Rammer and a 12-In. (305mm) Drop
---------	---

T 180-74	Moisture-Density Relations of Soils Using a 10-Lb. (4.54 Kg) Rammer and an 18-In. Drop
----------	--

T 191-61 (1974)	Density of Soil In Place by the Sand-Cone Method
-----------------	--

2. EQUIPMENT. All equipment, tools, and machines shall be maintained in satisfactory working condition at all times. Compaction equipment shall be suitable for consistently producing uniform soil densities.

3. GENERAL REQUIREMENTS FOR COMPACTED FILLS AND COMPACTED BACKFILLS.

3.1 Control. Moisture-density relations shall be established by the Contractor. Field density tests shall be performed by the Contractor in sufficient number and in such locations to insure that the specified density is being obtained. Moisture-density relations and field densities shall be reported on approved forms. One copy

of density data less dry weight determinations shall be provided on the day each test is taken. The completed test reports shall be provided with the Contractor Quality Control Report on the work day following the test.

3.1.1 Laboratory Control. One moisture-density relation shall be made for each classification, blend or change in classification of soil materials encountered. Approval of moisture-density relations shall be obtained prior to the compacting of any material in the work. The moisture-density relations shall be determined in a laboratory in accordance with the following requirements.

3.1.1.1 Outside of Street, Road, and Highway Rights-of-Way. AASHTO T 99, Method D or ASTM D 698, Method D, modified as specified hereafter.

3.1.1.1.1 All material over 3/4 inch in size will be removed and replaced with an equal portion of material between 0.187 inch, No. 4 sieve, and 3/4 inch in size.

3.1.1.1.2 A separate batch of materials will be used for each compaction test specimen. No materials will be re-used.

3.1.1.1.3 The desired amount of mixing water will be added for each compaction test specimen, mixed well, and the mixture will be placed in a container with an airtight cover and allowed to cure for 24 hours. A shorter curing time may be allowed where tests show that shortening the curing time will not affect the results.

3.1.2 Field Control. Field in-place density shall be determined in accordance with AASHTO T 191 or ASTM D 1556, except that in each test, the weight of the disturbed sample representing the full depth of layer shall be not less than 10 pounds for fine grain material and 12 pounds for coarse grain material using a scale for weighing of sufficient capacity and sensitive to .01 pounds. The density tests shall be well distributed and shall average not less than one test for each 1,000 cubic yards of material. At least one test shall be made in each 2 feet of compacted material processed as a unit and at least one test shall be made in each area.

3.1.3 Moisture-Density Curves for Cohesionless and Cohesive Materials. Cohesionless materials include gravels, gravel-sand mixtures, sands, and gravelly sands. Cohesive materials include clayey and silty gravels, gravel-silt mixtures, clayey and silty sands, sand-clay mixtures, clays, silts, and very fine sands. When results of compaction tests for moisture-density relations are recorded on graphs, cohesionless soils will show straight lines or reverse-shaped moisture-density curves, and cohesive soils will show normal moisture-density curves.

3.2 Settling of Fills or Backfills with Water will not be permitted.

3.3 Material shall be obtained from the required excavations, shall be free from sod, roots, brush, debris, trash or other objectionable material, and shall contain no stone whose greatest dimension is more than 3/4 of the layer thickness.

3.4 Placement. Fill material shall not be placed against concrete which has not been in place at least 14 days or until the concrete has attained a strength of 2,500 psi when tested in accordance with the section: CONCRETE. Compacted fill and backfill shall be placed with suitable equipment in horizontal layers which after compaction, shall not exceed 12 inches in depth for rubber-tired or vibratory rollers, 6 inches in depth for tamping rollers, and 4 inches in depth when mechanical tampers are used. The Contractor may vary the layer thickness within

these limits for most efficient operations. Material containing stones shall be placed in a manner to prevent the stones from striking the concrete structures and to prevent the formation of voids.

3.5 Moisture Content. Material shall have a uniform moisture content while being placed and compacted. Water shall be added at the source, if required, or by sprinkling each layer of material during placement. Uniform distribution of moisture shall be obtained by disking, harrowing, or otherwise manipulating the soil during and after time water is added. Material containing an excess of moisture shall be manipulated with suitable implements to facilitate maximum aeration and shall be permitted to dry to the proper consistency before being compacted. Fill shall have a maximum moisture content of not more than 3 percent above optimum and a minimum moisture content of not less than 3 percent below optimum.

3.6 Compaction. No layer of fill shall be compacted before the practicable uniform moisture content has been obtained. Scarified areas shall be compacted as specified for the fill placed thereon. Rollers will not be permitted to operate over buried structures until the compacted fill over the top of the structures has reached a depth of 2 feet. Compaction equipment shall be so operated that structures are not damaged nor overstressed during compaction operations. Mechanical tampers shall be used for compaction of fill material adjacent to structures where rolling equipment is impracticable for use in compaction.

#### 4. COMPACTED FILL, CHANNEL.

##### 4.1 Invert.

4.1.1 Preparation for Placing. Before placing material for compacted fill, the foundation surface shall be cleared of all existing obstructions, vegetation, and debris. Unsuitable material not meeting the requirements for fill material shall be removed where directed, and the existing surfaces scarified to a depth of 6 inches before placing the fill. Sloped ground surfaces steeper than one vertical to 4 horizontal, on which fill or compacted backfill is to be placed, shall be stepped in such a manner that the compaction equipment will bear on the full depth of the fill layer.

4.1.2 Compaction. Each layer of the materials shall be compacted to not less than 95 percent of maximum density.

#### 5. COMPACTED FILL, LEVEE.

5.1 Preparation for Placing shall conform to the requirements specified for preparation for placing fill material for the invert in the paragraph: COMPACTED FILL, CHANNEL.

5.2 Compaction. Each layer of levee fill for channel construction shall be compacted to not less than 90 percent of maximum density.

5.3 Trimming. The waterway side and top of levees shall be trimmed to the lines indicated on the drawing with a tolerance of plus or minus one inch, as measured perpendicular to the slope. Any material loosened by trimming shall be recompacted. The land side of levees shall be trimmed to a uniform alinement at top of levee and to a reasonably uniform slope at or outside the lines on the drawings.

#### 6. BACKFILLS.

## 6.1 Backfill and Fill About Structures.

6.1.1 Location. Backfill and fill shall consist of all fill against and/or around structures.

6.1.2 Material. Backfill and fill material shall be obtained from the required excavation as approved by the Contracting Officer. In general, the best material available will be designated as backfill and fill about structures. Backfill may consist of sand, gravelly sand, silty sands, sandy silts, clayey sands, and sandy clays. Organic material, silt, clay, broken concrete or pavement, boulders and other objectionable material shall not be used.

6.1.3 Placing. Fill material shall not be placed against concrete which has not been in place at least 14 days or until the concrete has attained a strength of 2,500 psi when tested in accordance with section: CONCRETE CONSTRUCTION. Fill shall be place in 4-inch layers.

6.1.4 Compaction shall be not less than 95 percent of maximum density.

6.2 Backfill, Toe shall consist of material placed over the toe stone protection. In general, the fill shall consist of material suitable for compacted fill placed in horizontal layers not more than 24 inches in thickness, smoothed and dressed to the lines and grades indicated, and compacted to not less than 90 percent maximum density. Broken concrete, rock, and boulders to be wasted may be buried in the lower portion of toe backfill areas, provided such material is placed in a manner that will prevent the formation of voids and provided it is placed in a manner that compaction will not be impeded. No depressions shall be left in toe backfill areas.

## 7. SUBGRADE PREPARATION.

7.1 Subgrade for Channel Invert Slab or Topsoil Material. After the channel has been excavated to rough grade, the entire subgrade for the channel invert slab or topsoil material shall be trimmed to a uniform grade and smoothed to make the subgrade ready to receive topsoil within the Interceptor Channel or concrete slab within the Arizona Canal improvement area. If the subgrade is disturbed by the Contractor's operations or is overexcavated, the subgrade shall be restored to grade and compacted to a density of 95 percent of maximum density. The finished surface of the subgrade shall not be more than 1/2 inch from the indicated grade at any point when tested with a 10-foot straightedge.

7.2 Subgrade for Levee Slope Canal, and Channel. Fills and excavation for canal, channel and levee slopes shall be trimmed to the lines and grades indicated on the drawings to make the subgrade ready to receive the top soil or pneumatically placed concrete lining or the grouted stone protection as designated for each of the areas. The finished surface of subgrade shall be smooth and shall not vary more than 1/2 inch from the indicated grade at any point when tested with a 10-foot straightedge.

7.3 Subgrade Preparation for Road Pavement and Driveways. The subgrade shall be alternately watered and scarified until the material is uniformly moistened throughout for a depth of not less than 4 inches. All stones larger than 4 inches in diameter, and hard ribs of earth shall be removed. The amount of water to be applied shall be that which is required to provide optimum results in compaction under rolling. Following the above operations, the roadbed shall be shaped to a true cross section sufficiently higher than the specified grade to allow for subsequent compaction and then be thoroughly compacted to not less than 95 percent

of maximum density. After the subgrade has been prepared and completed, the surface shall be firm, hard, and unyielding, with a true, even, and uniform surface conforming to the grade and cross section indicated on the drawings. All points of the finished subgrade shall be not more than 1/4 inch below or above true subgrade.

\* \* \* \* \*

## SECTION 2H

### PRIME COAT AND WEED KILLER

#### Index

- |                            |                                       |
|----------------------------|---------------------------------------|
| 1. Applicable Publications | 6. Equipment                          |
| 2. Bituminous Materials    | 7. Preparation of Surface             |
| 3. Sampling and Testing    | 8. Weed Killer                        |
| 4. Quantity To Be Applied  | 9. Application of Bituminous Material |
| 5. Weather Limitations     | 10. Waybills and Delivery Tickets     |

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

1.1 American Society for Testing and Materials (ASTM) Standards.

D 140-70  
(R 1976)

Sampling Bituminous Materials

D 1250-56  
(R 1977)

Petroleum Measurement Tables

D 2027-76

Cutback Asphalt (Medium-Curing Type)

2. **BITUMINOUS MATERIAL.** The bituminous material for the prime coat shall be liquid asphalt, conforming to ASTM D 2027, designation MC-70.

3. **SAMPLING AND TESTING.**

3.1 **Sampling.** Samples of bituminous material, unless otherwise specified, shall be in accordance with ASTM D 140.

3.2 **Testing** shall be the responsibility of the Contractor. Testing shall be performed by an acceptable commercial testing laboratory or by the Contractor on approval of the Contracting Officer. Materials shall be tested to establish compliance with the specified requirements.

3.3 **Certified Laboratory Test Reports.** Before delivery of bituminous materials, certified copies, in triplicate, of the tests specified herein and in referenced publications shall be submitted to and approved by the Contracting Officer. The testing shall have been performed by an independent laboratory approved by the Contracting Officer.

4. **QUANTITY TO BE APPLIED.** Bituminous material for the prime coat shall be applied in quantities of not less than 0.15 gallon nor more than 0.4 gallon per squared yard of the surface to be primed. Application of prime coat shall be divided, if necessary, into a 2 applications to avoid flowing off the surface. The exact quantities which may be varied to meet field conditions shall be determined by the Contractor and approved.

5. **WEATHER LIMITATIONS.** The prime coat shall be applied only when the prepared surface is dry or contains moisture not exceeding quantity to permit uniform distribution and desired penetrations. Prime coat shall be applied only when the

ambient temperature is 50 degrees F or above and the temperature has not been below 35 degrees F. for 12 hours immediately prior to application.

## 6. EQUIPMENT.

6.1 General. All equipment, tools, and machines, used in the performance of the work required by this section shall be subject to the approval and shall be maintained in satisfactory working conditons.

6.2 Bituminous Distributor shall have pneumatic tires of such width and number than the load produced on the base surface shall not exceed 650 pounds per inch of tire width. The distributor shall be designed and equipped to distribute the bituminous material uniformly at even heat on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard with a pressure range of 25 to 75 pounds per square inch and with an allowable variation not to exceed 5 percent from any specified rate. Distributor equipment shall include a separate power unit for the bitumen pump, full circulation spray bars, tachometer, pressure gage, volume measuring devices, adequate heaters for heating the materials to the proper application temperature, a thermometer to show the temperature of the tank contents, and a hose attachment suitable for applying bituminous material to spots unavoidably missed by the distributor. The distributor shall be equipped to circulate and agitate the bituminous material during the heating process.

6.3 Heating Equipment for Storage Tanks. Equipment for heating bituminous material shall consist of steam coils and equipment for producing steam, so designed that steam cannot get into the material. An armored thermometer with a range from 40 to 200 degrees F. shall be fixed to the tank so that the temperature of the bituminous material may be read at all times.

6.4 Brooms and Blowers shall be of the power type and shall be suitable for cleaning prepared surfaces.

7. PREPARATION OF SURFACE. Immediately before applying the (weed killer and) prime coat, all loose material, dirt, clay or other objectionable substance shall be removed from the surface by means of a power broom or blower supplemented with hand brooms. After the cleaning operation and prior to the application of the material, an inspection of the area to be treated shall be made by the Contractor to determine the fitness of the area to receive the material. The Contracting Officer shall be notified 24 hours in advance of application of the material. To assure a uniform spread of the material, the areas prepared for treatment, if excessively dry, shall be lightly sprinkled with water immediately before the application as directed.

8. WEED KILLER. A chemical weed killer shall be applied to subgrade surfaces of all paved areas prior to application of the prime coat. The weed killer may be either a fire retardant non-corrosive, water soluble mixture of sodium chlorates and sodium borates, a commercial herbicide with active ingredients not less than 25 percent Prometon: 2,4-bis(isopropylamino)-6 methoxy--5-triazine, or dry, free flowing borax. The sodium chlorate-sodium borate mixture shall be applied in a water solution at a rate that will yield a minimum of one pound of sodium chlorate per 100 square feet of treated surface. The equipment used for application of the solution shall mechanically agitate and circulate the solution at all times application is in process. Borax shall be applied dry on a previously dampened subgrade at a rate to yield the equivalent of 3 pounds of boron trioxide (B roll down, 2 roll up, 0, 3,) per 100 square feet of treated surface. After application of the borax, the area shall be uniformly sprinkled with water. The quantity of

water applied in the solutions or after application of dry borax shall be at least 4 gallons per 100 square feet of treated surfaces. Commercial herbicide shall be mixed with water and applied at a rate of one gallon per 1,500 square feet in accordance with manufacturer's written instructions.

9. APPLICATION OF BITUMINOUS MATERIAL. Immediately following the preparation of the surface, the bituminous material shall be applied by means of a bituminous distributor. The bituminous material shall be applied at a pressure within the range of 25 to 75 pounds per square inch and in the amounts as directed. The bituminous material shall be so applied that uniform distribution is obtained at all points of the surface to be treated. Unless the distributor is equipped to obtain satisfactory results at the junction of the previous and subsequent application, building paper shall be spread on the surface of applied material for a sufficient distance back from the ends of each application so that flow from the sprays may be started and stopped on the paper, and all sprayers operate at full force on the surface to be treated. Immediately after the application, building paper shall be removed and destroyed. Spots unavoidably missed by the distributor shall be properly treated with bituminous material. Following the application of bituminous material, the surface shall be allowed to dry without being disturbed for a period of not less than 48 hours, or longer as necessary to attain penetration into the foundation course and evaporation of the volatiles from prime material. The Contractor shall furnish and spread enough approved sand to blot up effectively and cure any excess bituminous material. The Contractor shall maintain the primed surface until the succeeding layer of pavement is placed by protecting the surface against damage and by repairing and repriming deficient areas at no additional cost to the Government. No smoking, fires, or flames other than heaters that are a part of the equipment shall be permitted in the vicinity of heating, distributing, or transferring operations of bituminous material.

9.1 Application Temperature shall be as directed and shall provide an application viscosity between 40 and 120 centistokes, kinematic, or 20 and 60 seconds, Saybolt-Furol. Application temperatures shall be within the following ranges, except that appropriate changes should be made when the ranges of viscosity is raised or lowered.

MC-70

120-190 degrees F.

The temperature-viscosity relationship shall be furnished to the Contracting Officer.

10. WAYBILLS AND DELIVERY TICKETS. Copies of waybills or delivery tickets shall be submitted during the progress of the work. Before the final statement is allowed, the Contractor shall file with the Contracting Officer certified waybills and/or certified delivery tickets for all bituminous material actually used in the construction of pavement covered by this section of the specification. The Contractor shall not remove bituminous material from the tank car or storage tank until the initial outage and temperature measurements have been taken by the Contracting Officer; nor shall the Contractor release the car or storage tank until the final outage has been taken by the Contracting Officer.

\* \* \* \* \*

SECTION 2I

ASPHALT CONCRETE

Index

- |                                    |   |
|------------------------------------|---|
| 1. Applicable Publications         | 10. Transportation of Bituminous Material |
| 2. Description                     | 11. Placing                               |
| 3. Aggregates                      | 12. Compaction of Mixture                 |
| 4. Bituminous Material             | 13. Joints                                |
| 5. Aggregate Gradation             | 14. Protection of Pavement                |
| 6. Composition of Mixture          | 15. Surface Requirements                  |
| 7. Mixing Plant                    | 16. Sampling                              |
| 8. Other Equipment                 | 17. Testing                               |
| 9. Treatment of Underlying Surface |   |

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

1.1 American Association of State Highway Transportation Officials (AASHTO) Standard.

M 226-78 Viscosity Graded Asphalt Cement

1.2 American Society for Testing and Materials (ASTM) Standards.

C 117-76 Materials Finer Than No. 200 (76 um) Sieve in Mineral Aggregates by Washing

C 127-77 Specific Gravity and Absorption of Coarse Aggregate

C 128-73 Specific Gravity and Absorption of Fine Aggregate

C 136-76 Sieve or Screen Analysis of Fine and Coarse Aggregates

D 242-70 (R 1975) Mineral Filler for Bituminous Paving Mixtures

D 1559-76 Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus

1.3 Military Standard (Mil. Std.).

MIL-STD-620A Test Methods for Bituminous Paving Materials  
& Notice 1

2. DESCRIPTION. Asphalt concrete indicated as "A.C." shall consist of fine and coarse aggregates and mineral filler, if required, uniformly mixed with hot bituminous material, and placed and compacted on a prepared subgrade.

3. AGGREGATES shall consist of crushed stone, crushed slag, crushed or uncrushed gravel, screenings, sand, and mineral filler. Aggregates shall have a satisfactory service record in bituminous pavement construction. The source selected shall be approved by the Contracting Officer. Material passing the No. 200 sieve shall be known as mineral filler. Mineral filler shall conform to ASTM D 242. The combined aggregates and mineral filler shall meet the requirements of subsequent paragraphs entitled AGGREGATE GRADATION and COMPOSITION OF MIXTURE.

4. BITUMINOUS MATERIAL to be mixed with the mineral aggregates shall be asphalt cement conforming to AASHTO M226, viscosity grade AR-40 Table 3.

5. AGGREGATE GRADATION. The aggregate gradation as determined by ASTM C 117 and C 136 and as selected by the Contracting Officer shall conform to one of the following:

Sieve Openings	Percentage by Weight, Passing		
	a	b	c
1 inch	100	-	-
3/4 inch	90-100	100	-
1/2 inch	-	90-100	100
3/8 inch	70-85	80-95	80-95
No. 4	50-65	55-72	55-73
No. 8	38-53	40-55	45-60
No. 50	12-26	14-27	17-30
No. 200	4-8	4-8	4-9

6. COMPOSITION OF MIXTURE.

6.1 Job-Mix Formula shall be submitted by the Contractor, and no bituminous mixture shall be manufactured until it has been approved. The formula will indicate the percentage of each sieve fraction of aggregate, percentage of asphalt, and temperature of the mixture as discharged from the mixer. The percentage of asphalt in the job-mix formula will be between 5.0 percent and 8.5 percent. Samples of the aggregates and asphalt shall be submitted for approval with the job-mix formula.

6.2 Test Properties of Bituminous Mixtures. The apparent specific gravity, as determined by ASTM C 127 and C 128, shall be used in computing the voids total mix and voids filled with bitumen, and the mixture shall meet the following requirements as determined by ASTM D 1559.

Test Property	50-Blow Compaction
Stability, minimum, pounds	500
Flow, maximum, 1/100-inch	20
Voids total mix, percent	3-5
Voids filled with bitumen, percent	75-85

6.3 Stripping of Aggregates. If the index of retained stability of the job-mix formula is less than 75 tested in accordance with Method 104 of MIL-STD-620, the aggregates shall be rejected or treated by one of the following procedures:

(1) Addition of heat-stable additives to bitumen.

(2) Addition of hydrated lime, or other cementitious material containing free lime, as a portion of the mineral filler.

7. MIXING PLANT shall be a weigh-batch or continuous-mixing type approved by the Contracting Officer and operated so as to produce a mixture within the job-mix formula.

8. OTHER EQUIPMENT.

8.1 Bituminous-Material Spreaders shall be self-propelled, capable of producing a finished surface conforming to the smoothness requirements specified hereinafter. The use of a spreader that leaves indentations or other objectionable irregularities in the freshly-laid mix will not be permitted.

8.2 Blowers and Brooms shall be of the power type suitable for cleaning the surface to be paved.

8.3 Saw shall be of the power type, capable of rapidly cutting pavement and trimming joints and edges of pavement.

8.4 Small Tools available on the work shall consist of the following: rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heater for heating small tools, wood sandals and stilt sandals of standard type, and other small tools as may be required.

8.5 Steel-Wheel Rollers shall be self-propelled, 3-wheel (tricycle) and/or tandem type, weighing not less than 20,000 pounds each. The rollers shall have adjustable wheel scrapers, water tanks, and sprinkling apparatus to keep the wheels sufficiently wet to prevent the bituminous mixture from sticking to the wheels. Rollers shall be capable of reversing without backlash and shall be free from worn parts. Roller wheels shall not have flat or pitted areas or projections that will leave marks in the pavement.

9. TREATMENT OF UNDERLYING SURFACE. Prior to laying a bituminous course, the underlying surface shall be cleaned of loose and foreign matter by sweeping with power sweepers, power brooms, and hand brooms, as directed. The surface to be paved shall receive a prime coat conforming to the requirements of the section: PRIME COAT AND WEED KILLER.

10. TRANSPORTATION OF BITUMINOUS MIXTURE. The bituminous mixture shall be transported from the mixing plant to the site in trucks having tight, clean, smooth bodies with a minimum coating of concentrated solution of hydrated lime and water to prevent adhesion of the mixture. Each load of mixture shall be covered with canvas or other suitable material to protect the mixture from the weather and to prevent loss of heat. Mixtures having temperatures greater than 350 degrees, mixtures having temperatures less than 235 degrees, or mixtures which form or show indications of moisture will be rejected. Hauling over freshly laid material will not be permitted.

11. PLACING. Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of asphalt. The mechanical spreader shall be adjusted and its speed regulated so that the surface of the course being placed will be smooth and continuous without tears and pulling. The course will be of such depth that after compaction, the cross section, grade, and contour

will be as indicated. In areas where the use of machine spreading is impractical, the mixture shall be spread by hand. Unless otherwise directed, placing shall begin on the high side of areas with a one-way slope or along the centerline of areas with a crowned section and shall be in the direction of the main traffic flow. Placing of the mixture shall be as continuous as possible, and the speed of placing shall be adjusted, as directed, to permit proper rolling.

12. **COMPACTION OF MIXTURE** shall be accomplished by steel-wheel and pneumatic tired rollers. Rolling shall begin as soon after placing as the mixture will support the roller without undue displacement. Rolling of the course shall be continued until all roller marks are eliminated and at least 95 percent of the density of a laboratory specimen of the same mixture has been obtained. The speed of the rollers at all times shall be slow enough to avoid displacement of the hot mixture. The wheels of the roller shall be moistened to prevent adhesion of the mixture. In areas not accessible to the roller, the mixture shall be compacted with hot hand tampers.

13. **JOINTS.** The joints between old and new pavements or between lanes of new work shall be constructed so as to insure uniform bond, texture, density, and smoothness as in other sections of the course. Edges of existing pavement shall be cut to straight, vertical surfaces. All contact surfaces of existing pavement shall be painted with a thin, uniform coat of asphalt.

14. **PROTECTION OF PAVEMENT.** After final rolling, no vehicular traffic shall be permitted on the pavement for at least 6 hours after rolling.

15. **SURFACE REQUIREMENTS.** The finished surface shall not vary more than 1/4 inch from a 10-foot straightedge. The straightedge shall be furnished by the Contractor. Defective areas shall be corrected by the Contractor at no additional cost to the Government.

16. **SAMPLING.** Sampling for the determination of thickness and density of the completed pavements will be performed by the Contracting Officer. The Contractor shall replace the pavement where samples are removed and an equitable adjustment will be made in accordance with the clause of the contract entitled: CHANGES.

17. **TESTING.** All tests necessary to determine conformance with the specified requirements will be performed by the Contracting Officer without cost to the Contractor. No payment will be made for areas of pavement deficient in composition, density, or thickness until they are removed and replaced by the Contractor as directed by the Contracting Officer.

\* \* \* \* \*

SECTION 2J

STONE PROTECTION

Index

- |                            |                                  |
|----------------------------|----------------------------------|
| 1. Applicable Publications | 4. Placement                     |
| 2. Materials               | 5. Scales                        |
| 3. Foundation Preparation  | 6. Waybills and Delivery Tickets |

1. **APPLICABLE PUBLICATIONS.** The American Society for Testing and Materials Standards listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

C 88-76	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
C 127-77	Specific Gravity and Absorption of Coarse Aggregate
C 136-76	Sieve or Screen Analysis of Fine and Coarse Aggregates
C 535-69 (R 1975)	Resistance to Abrasion of Large Size Coarse Aggregate by Use of the Los Angeles Machine
D 1141-75	Substitute Ocean Water

2. **MATERIALS.**

2.1 **Source and Material Approval.** The Contractor shall make all arrangements, pay all royalties, and secure all permits for the procurement, furnishing and transporting of materials. The source(s) from which the Contractor proposes to obtain the material shall be selected and a sample submitted a minimum of 45 days in advance of the time when the material will be required in the work. Stone from a proposed source where exploratory investigations and compliance test reports or satisfactory service records are not available, will be tested by the Government for quality compliance. The Government will test one sample at its expense. If the material fails the tests or if the Contractor desires to utilize more than one source, additional testing will be accomplished by the Government for the sum of \$1,400 for each sample tested. The costs of such tests will be deducted from payment due the Contractor. All test samples (500 pounds minimum) shall be representative of the rock source and shall be obtained by the Contractor under the supervision of the Contracting Officer and delivered at the Contractor's expense to the South Pacific Division Laboratory, U.S. Army Engineer Division, South Pacific, Sausalito, California. A list of sources from which acceptable stone protection materials have been obtained is available for informational purposes in the office of the District Engineer, Foundations and Materials Branch, 300 North Los Angeles Street, Los Angeles, California. Sources listed may no longer be available due to depletion or may not be acceptable because of changes in the material. The Contractor shall vary the quarrying, processing, loading and placing operations to secure the type and quality of stone protection specified. If the stone being furnished by the Contractor does not fully meet all the requirements of these specifications, the Contractor shall furnish at no additional cost to the Government, other stone

meeting the requirements of these specifications. Approval of stone from a source shall not be construed as a waiver of the right of the Government to require the Contractor to furnish stone which complies with these specifications. Materials produced from localized areas, zones or strata will be rejected when such materials do not comply with the specifications.

2.2 Quality Compliance. Test results and service records may be used to determine the acceptability of the stone protection materials. In the event compliance test reports and/or service records are not available, the material shall be subjected to the tests outlined in these specifications to determine its acceptability for use in the work. Before a proposed new source of stone will be considered for sampling and testing, one of the following criteria must be met:

a. A sufficiently developed quarry operation to demonstrate that an adequate quantity of stone is available to fulfill the contract requirements; or,

b. An exposed face plus sufficient explorations (results of which are made available to the Government) to demonstrate that an adequate quantity of stone is available to fulfill the contract requirements.

2.3 Quality Compliance Tests for Stone Protection. Stone shall meet the following test requirements.

Test	Test Method	Requirement
Specific Gravity (Bulk SSD)	ASTM C 127	2.65 minimum
Absorption	ASTM C 127	2.0% maximum
Wetting & Drying	SPD Test Procedure <sup>(1)</sup>	No fracturing <sup>(3)</sup>
Sodium Sulfate	ASTM C 88 <sup>(2)</sup>	10% max. loss <sup>(4)</sup>
Abrasion Loss	ASTM C 535	50% max. loss

In addition to the above tests, the stone shall be subjected to a petrographic and X-ray diffraction analysis. The stone must not contain any swelling type clay (illite or montmorillonite).

NOTE: (1): Test procedure wetting-and-drying tests. The initial step of the test is the careful examination of the entire sample and the selection of representative test specimens. The piece should be large enough to produce two cut slabs, 1 inch thick (+ 1/4 inch) with a minimum surface area of 30 square inches on one side. Two chunks approximately three by four inches are also chosen. The slabs and chunks are carefully examined under a low-power microscope and all visible surface features are noted and recorded. The specimens are then oven dried at 140 degrees F., for eight hours, cooled and weighed to the nearest tenth of a gram. The test specimens are photographed to show all surface features before the test. The chunks and slabs are then subjected to fifteen cycles of wetting and drying. One slab and one chunk are soaked in fresh tap water, the other slab and chunk are soaked in salt water prepared in accordance with ASTM D 1141. Each cycle consists of soaking for sixteen hours at room temperature and then drying in an oven for eight hours at 140 degrees F. After each cycle the specimens are examined with the low-power microscope to check for opening or movement of fractures, flaking along edges, swelling of clays, softening of rock surface, heaving of micaceous minerals, breakdown of matrix material and any other evidence of weakness developing in the rock. The cycle in which any of these action occurs is recorded. After fifteen cycles, the slabs and

chunks are again carefully examined and all changes in the rocks are noted and recorded. The test specimens together with all flakes or particles which come off during the test are oven dried, weighed and photographed.

NOTE: (2): The test shall be made on 50 particles each weighing 1000 grams, +20 grams, in lieu of the gradation given in C 88.

NOTE: (3): Weakening and loss of individual surface particles is permissible unless bond of the surface grains softens and causes general disintegration of the surface material.

NOTE: (4): Sandstones which have a loss greater than the specified limit will be accepted if the Contractor demonstrates that the rock has a satisfactory service record.

2.4 Gradation Sampling and Testing for Stone Protection performed by an approved testing laboratory on samples selected by the Contracting Officer. The Government reserves the right to perform check tests and to use the Contractor's sampling and testing facilities to make the tests. Each sample shall consist of not less than five tons of materials and shall be selected at random from the production run. One gradation test is required at the beginning of production prior to delivery of stone to the project and a minimum of one additional test for each 10,000 tons of material placed. All sampling and gradation tests performed by the Contractor shall be under the supervision of the Contracting Officer.

#### 2.5 Gradation.

2.5.1 General. All points on individual grading curves shall be between the boundary limits as defined by smooth curves drawn through specified grading limits plotted on a mechanical analysis diagram. The individual grading curves shall not exhibit abrupt changes in slope denoting skip grading or scalping of certain sizes. Specified grading of all material shall be met both at the source and as delivered to the project. In addition, material not meeting the required grading due to segregation or degradation during placement shall be rejected. If best results show that stone does not meet the required grading, the hauling operation will be stopped immediately and will not resume until processing procedures are adjusted and a gradation test is completed showing gradation requirements are met. All gradation tests shall be at the expense of the Contractor.

2.5.2 Grouted and Ungouted Stone shall be quarried stone or cobblestone reasonably well-graded within the limits specified below:

Smaller (by Weight)	Weight of Individual Pieces	Percent
100	160	
60-100	70	
15-50	35	
0-15	10	

2.6 Existing stone protection shall be salvaged where indicated. Stone shall be sorted and prepared for reuse. Stone shall be clean, free from earth, clay, refuse, and adherent coating. Stone removed and found of a quality unsuitable for reuse

shall be disposed of as directed. Stone in excess of the amount required for the work shall be disposed of.

3. FOUNDATION PREPARATION. Areas on which stone is to be placed shall be trimmed and dressed to conform to cross sections indicated or directed, within an allowable tolerance of plus or minus one inch from the theoretical slope lines and grades. Where such areas are below the allowable minus tolerance limit they shall be brought to grade by filling with earth similar to the adjacent material and well compacted, or by filling with approved material, and no additional payment will be made for any material thus required. Immediately prior to placing the stone, the prepared base shall be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

4. PLACEMENT.

4.1 Stone shall be placed in a manner to produce a reasonably well graded mass with the minimum practicable percentage of voids, and shall be constructed to the lines and grades indicated or directed. Stone shall be placed to its full course thickness in one operation and in a manner to avoid displacing the underlying material. Method of placement shall be submitted to Contracting Officer for approval prior to commencement of placement operations. The Contractor shall maintain the stone protection until accepted and any material displaced by any cause shall be replaced at his expense to the lines and grades shown on the drawings. Self propelled equipment shall not be used on the levee slopes and/or toe slopes. Hand placing, barring, or placing by crane will be required only to the extent necessary to secure the results specified. Placing stone by dumping into chutes or by similar methods likely to cause segregation will not be permitted. A tolerance of plus or minus 1-1/2 inches from the indicated slope lines and grades will be allowed in the finished surface, except that either extreme of such tolerance shall not be continuous over an area greater than 200 square feet.

5. SCALES shall be standard truck scales of the beam type. The scales shall be of sufficient size and capacity to accommodate all trucks used in hauling the material. Scales shall be tested, approved, and sealed by an inspector of the State Inspection Bureau charged with scales inspection within the state in which the project is located. Scales shall be calibrated and resealed as often as necessary to insure continuous accuracy. The necessary number of standard weights for testing the scales shall be on hand at all times and, if an official inspection bureau of the state is not available, the scales will be tested by the Contracting Officer.

6. WAYBILLS AND DELIVERY TICKETS. Copies of waybills or delivery tickets shall be submitted to the Contracting Officer during the progress of the work. Before the final statement is allowed, the Contractor shall file with the Contracting Officer certified waybills and/or certified delivery tickets for all stone actually used in the construction covered by the contract.

\* \* \* \* \*

## SECTION 3A

### CONCRETE

#### Index

- |                                    |                               |
|------------------------------------|-------------------------------|
| 1. Applicable Publications         | 9. Joints                     |
| 2. General                         | 10. Placing                   |
| 3. Storage                         | 11. Consolidation of Concrete |
| 4. Materials                       | 12. Concrete Slab Finishes    |
| 5. Concrete Quality                | 13. Curing                    |
| 6. Formwork                        | 14. Premolded Pad             |
| 7. Reinforcement                   |                               |
| 8. Installation of Anchorage Items |                               |

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

1.1 American Concrete Institute (ACI) Standards.

ACI 315-74                      Manual of Standard Practice for Detailing  
Reinforced Concrete Structures (6th Ed.;  
3d Prtg., Mar 77; Revised 1978)

ACI 318-77                      Building Code Requirements for Reinforced  
Concrete

1.2 American Society for Testing and Materials (ASTM) Publication.

C 94-78a                      Ready-Mixed Concrete

D 1751-73 (R 1978)              Preformed Expansion Joint Fillers for Concrete  
Paving and Structural Construction (Non-  
extruding and Resilient Bituminous Types)

D 1752-67 (R 1978)              Preformed Sponge Rubber and Cork Expansion  
Joint Fillers for Concrete Paving and  
Structural Construction

1.3 Federal Specifications (Fed. Spec.).

SS-S-1401B                      Sealing Compound; Hot-Applied, for Concrete  
and Asphalt Pavements

2. **GENERAL.** The work shall be in conformance with ACI 318, part entitled "Construction Requirements", except as specified herein. Concrete shall conform to ASTM C 94.

3. **STORAGE.** Materials shall be stored so as not to deteriorate or become contaminated.

4. **MATERIALS.**

4.1 Anchorage Items. Anchorage items for anchoring work of other trades to concrete shall be of standard manufacture and of types to engage with anchors provided and installed under other sections.

4.2 Concrete Materials. Concrete materials shall conform to ASTM C 94. Cement shall be type I or II, low alkali. Only one brand of any one type of cement shall be used for exposed concrete surfaces of any individual structure.

4.3 Curing Materials. Curing materials shall be impervious sheet or membrane-forming curing compound. Impervious sheet shall be white opaque polyethylene 4 mil thick, waterproof kraft paper, or polyethylene-coated burlap. Membrane-forming curing compound shall be of commercial formulation, sprayable, nontoxic, and will form a film highly resistant to moisture loss from concrete while curing and will dry within 4 hours. Compound shall be clear with fugitive dye, resin-base or chlorinated-rubber-base-type.

4.4 Expansion Joint Filler Strips, Premolded. Expansion joint strips shall be nonextruding, resilient bituminous or nonbituminous type commercially used in concrete paving or construction, 3/8-inch thick, ASTM D-1751 or D 1752.

4.5 Form Coating. Form coating shall be nonstaining form oil or form release agent that will not deleteriously affect concrete surfaces nor impair subsequent applications.

4.6 Form Materials. Form materials shall be plywood or hardboard especially made for concrete form use or other materials that will produce the specified finishes without adversely affecting the concrete surfaces.

4.7 Reinforcement. Reinforcement bars shall be deformed, Grade 40 billet or axle steel. Mesh shall be welded steel wire fabric with wires at right angles to each other.

5. CONCRETE QUALITY. Proportioning of concrete mixes to meet the requirements specified below shall be the Contractor's responsibility.

5.1 Compressive Strength. Compressive strength in 28 days shall be 3,000 psi. The compressive strengths shall be reached in 7 days when high-early-strength cement is used.

5.2 Entrained-Air Content. Entrained-air content of exterior concrete shall be maintained at 3 to 5 percent by volume of concrete.

5.3 Slump. Slump shall be 2 to 3 inches for all work.

6. FORMWORK. Formwork shall provide for concrete conforming accurately to the indicated shapes, lines, dimensions, and with surfaces free of offset, waviness, or bulges. Where surfaces are to be exposed or painted, panels shall be manufacturer's stock size material, using smaller panels cut to required dimensions only where required by openings and joints. Panel joints in exposed or painted work shall occur at control joints, including alignment with masonry control joints and construction joints. Exposed corners shall be chamfered, beveled, or rounded by moldings placed in the forms. Surfaces shall be thoroughly cleaned and coated before each use. Forms shall be removed at a time and in a manner that will not injure the concrete.

7. REINFORCEMENT. Reinforcement detailing and placement shall conform to ACI 315 and ACI 318. Reinforcement shall be interrupted 2-inches clear on each side of joints in slabs on grade and perimeter joints. Wire-mesh reinforcement shall be continuous between joints in slabs on grade. Laps shall be at least one full mesh plus 2 inches; staggered to avoid continuous lap in either direction; and securely wired or clipped with the standard clips. Mesh shall be supported on precast concrete units in a manner that will support the mesh at the minimum height indicated. Dowels and tie bars in slabs on grade shall be installed at right angles to joints; accurately aligned parallel to the finished surface; and rigidly held in place and supported during concrete placement. One end of dowels shall be oiled or greased.

8. INSTALLATION OF ANCHORAGE ITEMS. Anchorage items shall be of number, size, and location to insure sufficient anchorage for purpose intended.

9. JOINTS.

9.1 Jointing shall be as indicated. Unless otherwise indicated, crack control shall be provided by transverse construction joints at 10 feet on center.

9.2 Sealing Construction Joints. Sealing construction and expansion joints in slabs shall be filled with Fed. Spec. SS-S-1401 joint sealant. Joint surfaces shall be clean, dry, and free of oil or other foreign material. Joint sealant shall be applied as recommended by the manufacturer of the sealant. All joints shall be completely filled with sealer, which shall be well bonded to the concrete and free from voids.

10. PLACING. Concrete shall be placed upon clean undisturbed surfaces. Dry or pervious surfaces receiving concrete shall be covered with impervious sheet materials. Concrete may be placed directly on impervious surfaces that are thoroughly moistened but not muddy. Concrete to receive other construction shall be screeded to the proper level.

11. CONSOLIDATION OF CONCRETE. Consolidation of concrete shall be with internal concrete vibrators supplemented by handspading, rodding, and tamping. Vibrating equipment shall be adequate to thoroughly consolidate the concrete.

12. CONCRETE SLAB FINISHES. Slab shall be finished to a true plane with no deviation exceeding 1/8 inch when tested with a 10-foot straightedge. Surfaces shall be pitched to drains. Surfaces shall be screeded and floated to the required finish level with no coarse aggregate visible before finishing as specified below.

12.1 Monolithic Finish. Monolithic finish shall be given to slabs unless otherwise specified. After the surface moisture has disappeared, floated-surfaces shall be steel-troweled to a smooth, even, dense finish free from blemish including trowel marks.

13. CURING shall start as soon as free water has disappeared from concrete surfaces after placing and finishing. Curing materials shall be applied and maintained so as to protect the concrete from moisture loss for 7 days. Curing shall be accomplished by impervious sheet or membrane-forming curing compound. Concrete surfaces shall be thoroughly wetted before covering with impervious-sheet materials. Membrane-forming curing compound shall be applied with mechanical spraying equipment at a coverage of not more than 300 square feet per gallon. Surfaces damaged during curing shall be resprayed.

14. PREMOLDED PAD. Over the existing 8-inch VCP sewerline shall be built up with layers of expansion joint filler material, shall consist of premolded boards or strips of a durable resilient compound and comply with requirements of ASTM D-1751 or 1752. Thickness indicated shall be built up using adhesive recommended by the premolded pad manufacturer. The pad shall be cut-out as required for bell holes on the existing clay sewer pipe in order that the pad rest on the pipe and adjacent soil for as nearly its full length as practicable.

\* \* \* \* \*

SECTION 3B

GROUTING STONE PROTECTION

Index

- |                            |            |
|----------------------------|------------|
| 1. Applicable Publications | 3. Mixing  |
| 2. Materials               | 4. Placing |

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

1.1 Federal Specifications (Fed. Spec.).

SS-C-1960/GEN	Cement and Possolan, General Requirements for
---------------	---

SS-C-1960/3B	Cement, Portland
--------------	------------------

1.2 American Society for Testing and Materials (ASTM), Publications.

C33-78	Concrete Aggregates
--------	---------------------

1.3 U.S. Department of the Army, Corps of Engineers, Handbook for concrete and Cement.

CRD-C 300-77	Membrane-Forming Compounds for Curing Concrete
--------------	--

2. MATERIALS.

2.1 Aggregate shall conform to the requirements specified for fine aggregate of the section.

2.2 Portland Cement shall conform to the requirements of Fed. Spec. SS-C-1960/3, Type I and/or Type II. The alkali content of the cement shall not exceed 0.6 percent.

2.3 Water shall be fresh, clean, and potable.

3. MIXING. Grout shall be composed of cement, sand, and water mixed in the proportions as directed. The estimated cement content requirement per cubic yard of grout is 7-1/2 sacks. The water content of the mix shall not exceed 8-1/2 gallons per sack of cement. In calculating total water content of the mix, the amount of moisture carried on the surfaces of aggregate particles shall be included. Slump of grout mix shall be between 9 and 10 inches for the first course and between 7 and 8 inches for the second course or where one course is placed. The grout shall be mixed in a concrete mixer in the manner specified for concrete, except that time of mixing shall be as long as is required to produce a satisfactory mixture, and the grout shall be used in the work within a period of 30 minutes after mixing. Retempering of grout will not be permitted. The consistency of the grout shall be such as to permit gravity flow into the interstices of the stones with the help of spading, rodding, and brooming. Grout batches in the same course shall be uniform in mix, size, and consistency.

4. PLACING. Prior to grouting, the stone shall be flushed with water to wash down the fines and to prevent absorption of water from grout. The stone shall be kept wet just ahead of the actual placing of grout. The grout shall be placed in one course in invert and in 2 courses in side slopes. Each course shall be placed full width or in successive lateral strips approximately 10 feet in width, as applicable, extending from toe of slope to top on side slopes. The grout shall be brought to the place of final deposit by approved means and discharged directly on the stones using a splash plate of metal or wood to prevent displacement of stone directly under the discharge. The flow of grout shall be directed with brooms or other approved baffles to cover the entire area and to assure that all crevices are filled. Sufficient barring shall be done to loosen tight pockets of stone and otherwise aid the penetration of grout. The first course shall fully penetrate the stone blanket. The second course shall be placed as soon as the first course has sufficiently stiffened so that it will not flow when additional grout is added. On side slopes, all brooming shall be uphill, and after the second course has stiffened the entire surface shall be rebroomed to eliminate runs in the top course and fill voids caused by sloughing of the layers of grout. After completion of any strip or panel, no workmen or other load shall be permitted on the grouted surface for a period of 24 hours. The grouted surface shall be protected from injurious action of the sun; shall be protected from rain, flowing water, and mechanical injury; and shall be moist cured or membrane cured at the Contractor's option. Moist curing shall consist of covering the grout with a uniform thickness of 2 inches of sand which shall be kept continuously saturated for a period of 14 days. Membrane curing compound shall be a non-pigmented curing compound conforming to Corps of Engineers Serial No. CRD-C 300 except that the compound shall contain a fugitive dye. All concrete cured with non-pigmented curing compound shall be shaded from the direct rays of the sun for the first 7 days of the curing period. The curing compound shall be applied as soon as the free water disappears and shall be applied in a 2-coat continuous operation by approved power-spraying equipment at a rate of not to exceed 200 square feet per gallon for the combined coats. The second coat shall be applied to overlap the first coat in a direction approximately at right angles to the direction of the first application.

\* \* \* \* \*

SECTION 3C

PNEUMATICALLY PLACED CONCRETE

Index

- |                             |                                |
|-----------------------------|--------------------------------|
| 1. Applicable Publications  | 6. Preparation of Surfaces     |
| 2. Usage                    | 7. Placing                     |
| 3. Description              | 8. Finishing                   |
| 4. Materials                | 9. Curing and Protection       |
| 5. Proportioning and Mixing | 10. Contractor Quality Control |

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

1.1 Federal Specification (Fed. Spec.).

SS-C-1960/3B

Cement, Portland

1.2 American Society for Testing and Materials (ASTM) Publications.

A 185-79

Welded Steel Wire Fabric for  
Concrete Reinforcement

A 615-79

Deformed and Plain Billet-Steel  
Bars for Concrete Reinforcement

C 33-78

Concrete Aggregates

1.3 U.S. Army Corps of Engineers Handbook for Concrete and Cement (CRD).

CRD-C 300-77

Membrane-Forming Compounds for  
Curing Concrete

CRD-C 400-63

Water for Use in Mixing or Curing  
Concrete

1.4 American Concrete Institute (ACI) Standard.

ACI 304-73

Recommended Practice for  
Measuring, Mixing, Transporting,  
and Placing Concrete

2. USAGE. Pneumatically placed concrete shall be used in Arizona Canal side slope above the invert of poured-in-place concrete where indicated.

3. DESCRIPTION. Pneumatically placed concrete shall be produced by either the dry mixed process in which most of the mixing water is added to the dry materials immediately prior to its expulsion from the nozzle, or the wet mix process in which all of the materials (including water) are premixed before entering the delivery hose.

4. MATERIALS.

4.1 Portland Cement shall conform to the requirements of Fed. Spec. SS-C-1960, Type I or Type II, low alkali. Cement shall meet requirements for false set.

4.2 Fine Aggregate shall conform to the requirements of ASTM C 33. Fine aggregate shall contain not less than 3 percent nor more than 6 percent moisture by weight. The proportions of fine aggregate and cement shall be corrected to allow for bulking due to sand moisture content.

4.3 Water for mixing and curing shall be clean, fresh and free from injurious amounts of mineral and organic substances as determined by CRD-C 400.

4.4 Reinforcement.

4.4.1 Welded-steel-wire fabric shall conform to ASTM A 185, size(s) as indicated.

4.4.2 Bar reinforcement shall conform to ASTM A 615, grade 40.

4.4.3 Spacing of Bars. The spacing of bars shall be as indicated on the drawings. Maximum variation from the indicated position of bars shall be one inch as measured along the row of bars.

## 5. PROPORTIONING AND MIXING.

5.1 Dry Mix Process. The dry mixture shall consist of one part Portland cement to not more than 4-1/2 parts of fine aggregate. Measurement may be either by volume or weight. The material shall be mixed dry in an approved power batch mixer equipped with accurate measuring and timing devices and capable of thoroughly mixing the fine aggregate and sand in sufficient quantity to maintain placing continuity. The mixing time shall be as recommended by the manufacturer of the mixer except that the mixing time shall be not less than one minute in drum-type mixers. Mixers shall be capable of discharging all mixed material without any carryover between batches. Materials that have been mixed for more than 45 minutes and have not been incorporated into the work shall not be used.

5.2 Wet Mix Process. The premixed concrete shall contain not less than 6-1/2 sacks of Portland cement per cubic yard of fine aggregate and water. A maximum of 30 percent pea gravel may be substituted for an equal amount of fine aggregate. The maximum size of pea gravel shall be such that 100 percent passes the 1/2 inch screen and at least 90 percent passes the 3/8 inch screen. Measurement may be either by volume or weight. The mixing equipment shall be capable of thoroughly mixing the materials in sufficient quantity to maintain continuous placing. The required mixing time shall depend on the mix being used and the efficiency of the mixer. Mixing shall conform to ACI 304. Non-agitating hauling equipment may be used subject to the approval of the Contracting Officer.

5.3 Strength. Pneumatically placed concrete shall have a minimum compressive strength of not less than 3,000 pounds per square inch at 28 days.

## 6. PREPARATION OF SURFACES.

6.1 Preparation of Foundation. Areas to receive pneumatically placed concrete shall be thoroughly compacted and trimmed to line and grade with sufficient moisture to provide a firm foundation and prevent adsorption of water from the concrete. No free water shall be present on the surface. Ground or gaging wires shall be used where necessary to establish thicknesses, surface planes and finish lines.

## 7. PLACING.

7.1 Workmen. Only experienced foremen, gunmen, nozzle men, and rodmen shall be employed and satisfactory written evidence of such experience shall be furnished the Contracting Officer or his representative upon demand.

7.2 Equipment. The Contractor shall provide delivery equipment of approved design which will apply the material by means of pneumatic pressure. Air shall be supplied in sufficient volume and under such pressure as may be necessary for the best operating conditions. Air pressure at the nozzle shall be steady and without pulsation. A constant pressure of not less than 45 pounds per square inch shall be maintained in the placing machine where the hose length is 100 feet or less and the pressure shall be increased at least 5 pounds for each additional 50 feet of hose or fraction thereof. Water used for hydration at the nozzle shall be maintained at a uniform pressure not less than 15 pounds per square inch greater than the air pressure at the machine.

7.3 Applying. The nozzle shall be held as nearly perpendicular as possible to the surface to which the mortar is applied, at such distance and narrow range of movement as will produce a spreading effect over a small area. The velocity of discharge from the nozzle, the distance of the nozzle from the face, and the amount of water used shall be regulated by the nozzle men in such a way as will produce a dense coating resulting in a minimum rebound of materials and no sloughing. Rebound material shall not be used again but shall be removed from the work. The maximum thickness of each layer will be limited to the thickness which can be placed without the material sagging. Time between application of layers shall be only sufficient to insure against sloughing. In case a portion of the previous layer has set to such hardness or has become coated in a manner preventing adequate bonding, the surface of that layer shall be cleaned by air and water jets before starting the next layer. Construction joints shall be avoided. Where necessary, at the end of the day's work or similar stopping periods, the concrete shall be tapered to a thin edge. Before applying the adjacent section, this tapered portion shall be thoroughly cleaned and wetted.

7.4 Clean-up. At the completion of each day's work, or as otherwise directed, all accumulations of pneumatically placed concrete on adjacent surfaces shall be removed.

8. FINISHING. After the concrete has been placed to the required thicknesses the surface shall be checked with a straightedge and any low spots or depressions shall be filled.

8.1 Wood Float Finish. All surfaces shall receive a wood float finish. After the concrete has taken an initial set (crumbling slightly when cut) the surfaces shall be screeded with straightedges and when surface moisture disappears, the surfaces finished to an even granular textured surface with a wood float.

## 9. CURING AND PROTECTION.

9.1 General. Concrete shall be cured for the period of time given below corresponding to the cementing materials used in the concrete:

Type I Portland cement	7 days
Type II Portland cement	14 days

The Contractor shall have all equipment needed for adequate curing and protection of the concrete on hand and ready to install before actual concrete placement begins. The curing medium and method, or the combination of mediums and methods used, shall be approved in writing. The curing medium shall be applied so as to prevent loss of moisture from the concrete. Concrete shall be protected from the damaging effects of rain for 12 hours, flowing water for 14 days and direct rays of sun for 3 days. All concrete shall be adequately protected from damage. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time. Formed openings through the concrete shall be closed during the entire construction period.

9.2 Moist Curing. Concrete shall be moist-cured by maintaining all surfaces continuously (not periodically) wet for the duration of the entire curing period. Surfaces of concrete which are to be permanently exposed, shall be cleaned if water used which stains or discolors the surfaces, if staining occurs from rusting of the reinforcement, or if staining occurs from any other cause. All moist cured concrete shall be protected from the direct rays of the sun for the first 7 days of the curing period.

9.3 Membrane Curing. At the option of the Contractor, concrete in all structures or portions of structures may be cured with an approved pigmented curing compound of the surface membrane type in lieu of moist curing with water. The pigmented curing compound shall conform to Corps of Engineers Serial No. CRD-C 300. The curing-compound shall be applied to formed surfaces immediately after the forms are removed and prior to any patching or other surface treatment except the cleaning of loose sand, mortar, and debris from the surface. The surfaces shall be thoroughly moistened with water and the curing compound applied as soon as free water disappears. The curing compound shall be applied to unformed surfaces as soon as free water has disappeared. The curing compound shall be applied with an overlapping coverage that will give a two-coat application at a coverage of not more than 400 square feet per gallon for each coat. The application of curing compound by hand-operated pressure sprayers will be permitted only on odd widths or shapes of slabs where indicated, and on concrete surfaces exposed by the removal of forms. When application is made by hand-operated sprayers, the second coat shall be applied in a direction approximately at right angles to the direction of the first coat. The compound shall form a uniform, continuous, cohesive film that will not check, crack, or peel, and that will be free from pinholes and other discontinuities. If pinholes, abrasions, or other discontinuities exist, an additional coat shall be applied to the affected areas within 30 minutes. Concrete surfaces which have been subjected to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage herein specified. All concrete surfaces on which the curing compound has been applied shall be adequately protected for the duration of the entire curing period from pedestrian and vehicular traffic and from any other cause which will disrupt the continuity of the curing membrane.

## 10. CONTRACTOR QUALITY CONTROL.

10.1 General. The Contractor shall perform the following inspections and tests, and based upon the results of these inspections and tests, he shall take such action and submit reports as hereinafter specified.

### 10.2 Inspection Details and Frequency of Testing.

10.2.1 Preparation for Placing. Foundation, forms and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify to the Contracting Officer it is ready to receive concrete. The results of each inspection shall be reported in writing.

10.2.2 Placing. The placing foreman shall supervise all placing operations and shall be responsible for measuring and recording ambient temperature, weather conditions, time or placement, yardage placed, and method of placement.

10.2.3 Compressive Strength. The Contractor shall provide for test purposes 2 test panels from each 8-hour shift. Each panel shall be not less than 12 inches square and 3 inches in thickness. Cubes, 3 x 3 x 3 inches in size shall be sawed from the panels for testing. One half of the cubes shall be tested at 7 days and one half at 28 days. Panels shall be cured, stored and tested by and at the expense of the Contractor. Cube strengths may be reported as determined or converted to cylinder strengths by multiplying by the factor 0.85. Test results shall be reported in writing.

10.2.4 Curing.

10.2.4.1 Moist Curing. At least once each shift an inspection shall be made of all areas subject to moist curing. The surface moisture condition shall be noted and recorded.

10.2.4.2 Curing Compound. No curing compound shall be applied until the Contractor's authorized representative has verified that the compound is properly mixed and ready for spraying. At the end of each operation he shall estimate the quality of compound used and the area of concrete surface covered and compute the rate of coverage in square feet per gallon. He shall note whether coverage is uniform.

10.3 Action Required.

10.3.1 The placing foreman shall not permit placing to continue when material is not uniform at the nozzle or the material is not being applied at proper velocity for good compaction. Immediate steps shall be taken to correct these conditions.

10.3.2 Curing.

10.3.2.1 Moist Curing. When a daily inspection report lists an area of inadequate curing, the required curing period for that area shall be extended by one day.

10.3.2.2 Curing Compound. When the coverage rate of curing compound is less than that specified or when the coverage is not uniform, the entire surface shall be sprayed again.

10.3.3 Compressive Strength. When laboratory-cured specimens fail to conform to the requirements for strength, the Contractor shall change the proportions or the water contents, or both, for the remaining portions of the work.

10.4 Reports. All results of tests conducted at the project site shall be reported weekly and shall be delivered to a designated representative of the Contracting Officer within 3 days after the end of each weekly report period. Each weekly report shall include the updating of control charts covering the entire period from the start of the construction season through the current week. During periods of cold weather protection, reports of pertinent temperatures shall be made daily. These requirements do not relieve the Contractor of the obligation to report certain failures immediately as required in preceding paragraphs. Such reports of failures and the action taken shall be confirmed in writing in the routine reports. The Contracting Officer has the right to examine all Contractor quality control records.

\* \* \* \* \*

SECTION 5A

MISCELLANEOUS METALWORK AND MATERIALS

Index

- |                               |                        |
|-------------------------------|------------------------|
| 1. Applicable Publications    | 7. Welding             |
| 2. Materials                  | 8. Bolted Connections  |
| 3. Workmanship                | 9. Pipe Gate           |
| 4. Finishing                  | 10. Electrical Conduit |
| 5. Zinc Coating (Galvanizing) | 11. Manhole Adjustment |
| 6. Castings                   |                        |

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

1.1 Federal Specifications (Fed. Specs.).

FF-B-575C	Bolts, Hexagon and Square
FF-N-836D & Am-1	Nut, Square, Hexagon, Cap, Slotted Castle, Knurled, Welding and Single Ball Seat
FF-S-325 Int. Am-3	Shield, Expansion; Nail, Expansion; and Nail, Drive Screw (Devices, Anchoring, Masonry)
QQ-B-750 & Am-2	Bronze, Phosphor; Bar, Plate, Rod, Sheet, Strip, Flat Wire, and Structural and Special Shaped Sections
QQ-S-763D Notice 1 & Int. Am-1	Steel Bars, Wires Shapes, and Forgings, Corrosion-Resisting
RR-F-621C	Frame, Covers, Gratings, Steps, Sump and Catch Basin, Manhole
RR-W-365 & Am-1	Wire Fabric (Insect Screen)
WW-C-581E	Conduit, Metal, Rigid; and Coupling, Elbow, and Nipple, Electrical Conduit: Zinc-Coated.
WW-P-401E	Pipe and Pipe Fittings, Cast-Iron, Soil

1.2 American Society for Testing and Materials (ASTM) Standards.

A 36-77a	Structural Steel
A 48-76	Gray Iron Castings

- A 120-78 Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless for Ordinary Uses
- A 123-78 Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips
- A 320-78 Alloy-Steel Bolting Materials for Low-Temperature Service
- A 500-78 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A 501-76 Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- B 32-76 Solder Metal

1.3 American Welding Society (AWS) Standard.

- B3.0-77 Welding Procedure and Performance Qualification
- D1.1-75 Structural Welding Code

1.4 Institute of Electrical and Electronics Engineers (IEEE) Standards.  
National Electrical Safety Code (ANSI C2).

1.5 National Fire Protection Association (NFPA) Publications.

- No. 70-1978 National Electrical Code

1.6 Underwriters Laboratories, Inc. (UL) Publication.

- UL 854 Service-Entrance Cables (June 18, 1975; Rev. thru Jan. 23, 1979)

1.7 U.S. Department of Commerce, Product Standard (Prod. Std.).

- PS 1-74 Construction and Industrial Plywood

2. MATERIALS.

2.1 General. Materials indicated on the drawings or required in the work and not covered elsewhere by detailed requirements shall conform to the requirements of this section. In all cases not specifically covered in these specifications, the Contractor shall furnish approved highest grade commercial materials or products.

2.2 Structural Steel shall conform to ASTM A 36.

2.3 Corrosion-Resisting Steel Bolts and Anchor Bolts shall conform to Fed. Spec. QQ-S-763, Class 304, Condition A, or the applicable requirements of ASTM A 320, Grade B8.

2.4 Bronze shall conform to Fed. Spec. QQ-B-750, hard temper of either composition.

2.5 Bolts shall conform to Fed. Spec. FF-B-575.

2.6 Nuts shall conform to Fed. Spec. FF-N-836.

2.7 Cast Iron Pipe and Fittings shall conform to the applicable requirements of Fed. Spec. WW-P-401.

2.8 Expansion Anchors shall conform to the applicable requirements of Fed. Spec. FF-S-325. Anchors shall be multiple unit with inside thread.

2.9 Structural Tubing shall conform to the applicable requirements of ASTM A 500 or A 501. Tubing shall be hot-dip galvanized after fabrication.

2.10 Plywood. Prod. Std. OS 1, exterior grade for shelf.

2.11 Steel Conduit shall conform to Fed. Spec. WW-C-581.

2.12 Wire Screen shall conform to Fed. Spec. RR-W-365 Type VI, corrosion resistant, 18 x 18 mesh per linear inch.

3. WORKMANSHIP. Steel with welds will not be accepted, except where welding is definitely specified or called for on the drawings. All bolts, nuts, and screws shall be tight. All exposed ferrous metalwork (except cast-iron and corrosion-resistant steel and items to be completely embedded in concrete) shall be galvanized unless other protective coatings are specified. Metalwork shall be galvanized after fabrication. Complete shop drawings for fabrication of all miscellaneous metalwork shall be submitted for approval, in accordance with the requirements for shop drawings of SPECIAL PROVISIONS.

4. FINISHING. In general, tolerances for machine-finished surfaces designated by nondecimal dimensions shall be within 1/64 inch. Sufficient machining stock shall be allowed on placing pads to insure true surfaces of solid material. Finished contact or bearing surfaces shall be true and exact to secure full contact. All drilled holes for bolts shall be accurately located and drilled from templates.

5. ZINC COATING (GALVANIZING). Zinc coatings shall be applied in a manner and of a thickness and quality conforming to ASTM A 123. In the event that any portion of galvanized metalwork is abraded or otherwise damaged to the extent that the base metal is exposed, such damaged or abraded portions shall be neatly covered with Grade 50B solder conforming to the requirements of ASTM B 32.

6. CASTINGS. Each casting shall have the mark number and heat number cast or stamped upon it. Dimensions of castings shown on the approved shop drawings will be the finish dimensions. Before leaving the foundry, all castings shall be thoroughly cleaned and subjected to hammer inspection after which they shall be treated.

7. WELDING shall conform to the provisions of AWS D1.1. Welders who have not been certified within 2 years of the date of commencement of work under this contract shall be required to pass successfully the qualification test as prescribed by AWS B3.0.

8. BOLTED CONNECTIONS. Bolts holes shall be reamed normal to the number and shall be truly cylindrical throughout. Unless otherwise specified, holes for bolts shall not be more than .02 inch larger than the diameter of the bolt.

9. PIPE GATE. Pipe and pipe posts shall conform to ASTM A 120, standard weight, galvanized, of the sizes shown. Posts shall be set plumb in concrete bases of dimension indicated. Concrete in bases shall be thoroughly compacted and finished in a dome. Pipe gate chain shall be case hardened security straight chain, welded to pipe as indicated. Reflectors shall be 3-inch diameter, plastic or glass, clear type mounted on target plate with baked enamel finish. Plate shall be secured to pipe rail with tamper proof fasteners. Grease fittings shall be of the size indicated, heavy duty, with built-in flush ball and spring. Fittings shall be securely attached to the pipe by means of bevel washer or other approved method that insures proper fit. Pipe cap shall be standard galvanized malleable pipe cap of the size indicated. Cap shall be firmly attached to pipe after completion of pipe gate by means of 2 hexagon socket head cap screws as indicated.

#### 10. ELECTRICAL CONDUIT.

10.1 General. The contract drawings indicate the extent and general arrangement of the underground electrical conduit at the gaging station for future use of weir.

10.2 Capacities of all equipment and material shall be not less than those indicated.

10.3 Codes. The installation shall comply with the applicable requirements and recommendations of the National Electrical Code and the National Electrical Safety Code.

10.4 Conformance with Agency Requirements. Where materials or equipment are specified to conform to the standards of the Underwriters' Laboratories, Inc., or to be constructed or tested, or both, in accordance with the standards of the National Electrical Manufacturers association or American National Standards Institute, Inc., the Contractor shall submit proof that the items furnished under this section of the specifications conform to such requirements. The label of, or listing by the Underwriters' Laboratories, Inc., will be acceptable as sufficient evidence that the items conform to Underwriters' Laboratories, Inc., requirements. Conformance with the agency requirements does not relieve the item from complying with any other requirements of the specifications.

10.5 Prevention of Corrosion. All metallic materials shall be protected against corrosion. Exposed metallic parts of outdoor apparatus shall be given a rust-inhibiting treatment and standard finish by the manufacturer. All parts such as boxes, bodies, fittings, guards, and miscellaneous parts made of ferrous metals but not of corrosion-resistant steel, shall be zinc-coated in accordance with ASTM A 123 or A 153, except where other equivalent protective treatment is specifically approved in writing by the Contracting Officer.

Steel conduits installed underground or under slabs on grade shall be coated with an approved asphaltic paint, plastic coating or shall be wrapped with a single layer of a pressure-sensitive plastic tape, half-lapped. Where pressure-sensitive plastic tape is used, the conduit shall be coated with a primer recommended by the tape manufacturer before applying the tape.

10.6 Standard Products. Materials and equipment shall be essentially the standard products of a manufacturer regularly engaged in the manufacture of the product, shall meet the requirements of the specification, and essentially duplicate materials and equipment that have been in satisfactory use at least 2 years.

#### 11. MANHOLE ADJUSTMENT.

11.1 General. The manhole top shall be reconstructed to the limits required to match the channel side slope. The masonry materials shall be of the materials needed to match existing manhole structure. The Contractor's proposed method of work, list of materials selected, and specials required, shall be submitted to, and approved by, the Contracting Officer prior to installation.

11.2 Jointing and Plastering. Mortar joints shall be completely filled and shall be smooth and free from surplus mortar on the inside of the manhole. Brick or concrete block manhole shall be plastered with 1/2 inch of mortar over the entire outside surface of the walls. Mortar and mastic joints between precast rings shall be full-bedded in jointing compound and shall be smoothed to a uniform surface on both the interior and exterior of the manhole. Installation of rubber gasket joints between precast rings shall be in accordance with the recommendations of the manufacturer.

11.3 Frames and Covers. Cast iron frames and covers shall conform to the requirements for watertight frame and cover, the drawings in all essentials of design and to Fed. Spec. RR-F-621, type as suitable for the application. The frames and covers shall have a combined weight of not less than 400 pounds and shall conform to ASTM A 48, Class 20B. The letter "S", at least 2 inches high, shall be stamped or cast into all covers so as to be plainly visible. Unless otherwise shown on the drawings, the frames and covers shall be so set that the top of the cover will be 2 inches higher than finished grade at high side of channel side slope.

\* \* \* \* \*

SECTION 8A

STEEL DOORS AND FRAMES

Index

- |                            |                          |
|----------------------------|--------------------------|
| 1. Applicable Publications | 5. Construction of Doors |
| 2. Shop Drawings           | 6. Delivery and Storage  |
| 3. General Requirements    | 7. Installation          |
| 4. Construction of Frames  | 8. Door Plate            |

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

1.1 American National Standards Institute, Inc. (ANSI) Standard.

A115.2-1971	Bored or Cylindrical Locks for 1-3/4" Doors
-------------	---

A123.1-1974	Nomenclature for Steel Doors and Steel Door Frames
-------------	--

1.2 American Society for Testing and Materials (ASTM) Standards.

A 366-72 (R 1979)	Steel, Carbon, Cold-Rolled Sheet, Commercial Quality
-------------------	--

A 569-72 (R 1979)	Steel, Carbon (0.15 Maximum, Percent Hot-Rolled Sheet and Strip, Commercial Quality
-------------------	---

2. SHOP DRAWINGS shall be submitted for approval in accordance with the SPECIAL PROVISIONS. Shop drawings shall indicate the location of the door and frame, elevation of the door and frame, details of construction, method of assembling sections, location and extent of hardware reinforcement, hardware locations, type and location of struts and anchors for frames, and thicknesses of metal. Shop drawings shall include specifications for shop painting including pretreating and painting materials and processes, and catalog cuts or descriptive data for the weather stripping and threshold.

3. GENERAL REQUIREMENTS.

3.1 Steel. Door and frame shall be factory fabricated from steel conforming to ASTM A 366 or A 569, stretcher level degree of flatness, pickled and oiled if hot rolled material, and Manufacturer's Standard Gages specified hereinafter for the various uses.

3.2 Shop Painting. After fabrication, door and frame shall be thoroughly cleaned, pretreated to provide a strong bond between metal and paint, and shop painted with a rust inhibiting primer paint.

3.3 Workmanship. The finished items shall be rigid, neat in appearance, and free from defects, warp, or buckle. Molded members shall be sharp in detail, straight, and true. Corner joints shall be coped or mitered, well-formed, and in true alinement. Exposed welded joints shall be dressed smooth.

3.4 Preparation For Hardware. Door and frame shall be prepared for hardware in conformance with the templates provided under section: HARDWARE; BUILDERS'; the requirements of ANSI A115.2 and A123.1; and the application locations specified in section: HARDWARE; BUILDERS'. Cutting, reinforcing, drilling, and tapping of door and frame shall be done at the factory, except drilling and tapping for surface applied hardware will be done in the field when the hardware is applied. Door frames shall be prepared for silencers, and rubber silencers shall be provided with the frames. Reinforcement of door and frame for hardware shall be as specified in Table I at the end of this section.

3.5 Weatherstripping for head and jamb protection shall be spring-tension type or integral elastomeric type. Spring-tension type weatherstripping shall have hemmed edges and shall be of bronze, aluminum, or corrosion-resisting steel. Spring bronze or spring aluminum shall be not less than 0.008 inch thick; and corrosion-resisting steel shall be not less than 0.005 inch thick. Integral elastomeric type weatherstrip shall be of synthetic rubber, vinyl or neoprene standard with the manufacturer of the door frame. The integral elastomeric type weatherstripping shall be installed at the factory or on the jobsite in accordance with the door frame manufacturer's recommendations. Weatherstripping for bottom of doors shall be of the mounted sweep type consisting of 1/8-inch thick neoprene in an extruded aluminum or bronze housing not less than 0.070 inch thick.

3.6 Thresholds shall be extruded aluminum or bronze, flat type with a fluted top, and shall provide the proper clearance and an effective seal with the specified weatherstripping.

4. CONSTRUCTION OF FRAMES. Pressed steel frames for door shall be of the combination buck, frame, and trim type of the sizes and details shown. Gages of metal shall be not lighter than 16-gage. Frames shall be knockdown type or welded unit type.

4.1 Welded Unit Type Frames shall have headers and jambs secured at the corners either by internal welding of faces or by welded splice plates and shall be further secured at the rabbet either by welding or mechanical interlock. As an alternate, the headers and jambs shall be secured at the corners by external welding of faces and grinding smooth. Faces of frames at junction of head and jamb shall present neat line joints. Transom bars shall member with jambs, and shall be butt welded thereto.

4.2 Knockdown Type Frames shall have joints that interlock rigidly so as to maintain alinement of parts and provide functionally satisfactory performance of completed frames when field assembled. Faces of frames at junction of head and jambs shall present neat line joints.

4.3 Anchors. Frames shall be provided with a minimum of three wall anchors per jamb as required for the adjoining wall construction, ceiling strut anchors as required by the drawings, and anchors for attachment of frame to the floor. Anchors shall be of not less than 18 gage steel.

5. CONSTRUCTION OF DOORS. Doors shall be of the type, size, and design shown. Door clearances shall not exceed the following: 1/8 inch at jambs and head; and 3/4 inch at bottom measured from finished floorline. Doors shall have top edges closed flush and sealed against water penetration.

5.1 Flush Doors shall be of full flush construction. Doors shall be internally reinforced to resist impact and to insure flatness of finished surfaces by steel members welded in place, water-resistant honeycomb core glued in place, or rigid insulation core glued or foamed in place. Doors with metal reinforcing shall have sound deadening material applied to the interior of the door to eliminate metallic sound incident to normal door operation. Honeycomb core material shall have a crushing strength of not less than 4,000 p.s.f., and the lamination shall withstand not less than 1,500 p.s.f. surface shear. Foam insulation core material shall have a compressive strength of not less than 1,500 p.s.f. and a shear strength of not less than 18 p.s.i., shall have an insulation-to-steel strength at least equal to the strength of the insulation, shall be dimensionally stable within plus or minus 5 percent of volume after 24-hour exposure to temperatures ranging from minus 15 degrees F. to 165 degrees F., shall have no voids extending 1/2 inch in any direction, and shall have a density of not less than 1.0 pound per cubic foot. Solid mineral insulation core material shall have a density of not less than 20 pounds per cubic foot.

5.1.1 Full Flush Construction shall have face sheet of not less than 18-gage-steel, shall have no seams or joints on door faces, and shall have top and bottom closed with a recessed channel or a flush and end closure treatment.

6. DELIVERY AND STORAGE. To provide protection during shipment, welded unit type frame shall be provided with temporary steel spreaders at the bottom of each frame; and knockdown type frames shall be securely strapped in bundles. Materials shall be delivered to the site in undamaged condition, stored out of contact with the ground and under a watertight covering, permitting good air circulation. Whenever they become evident, abraded, scarred or rusty areas shall be cleaned and touched up with the paint used for the shop painting.

7. INSTALLATION. Frame shall be plumbed, leveled, and rigidly secured in place. Temporary spreaders shall be installed until the wall at the frame is completed and the frame is securely anchored in its final position. Wall anchors on doorframes shall be installed approximately at the hinge and strike levels. Door shall be installed in conjunction with the application of hardware weatherstripping and threshold shall be installed to provide weathertight installation.

8. DOOR PLATE. Additional 1/4 inch thick steel plate shall be installed on interior side of door in accordance with details shown on drawings and applicable requirements of section: MISCELLANEOUS METAL WORK AND MATERIALS.

TABLE I. REINFORCEMENT

Hardware Item	Minimum Gage	Minimum Size, Inches
Hinges	Door 10	8 x 1-1/4
	Frame 10	8 x 1-1/4
Mortise Locksets and Deadlocks	Door 14	10 x 3-3/4
	Frame 14	6-1/2 x 1-1/2

Lighter gages may be used if formed to a channel-shape or a U-shape that provides rigidly equivalent to that of flat reinforcements of specified gage. Gage and size of reinforcement for hardware items not listed above shall be as required by the templates for those items.

\* \* \* \* \*

SECTION 8C

HARDWARE; BUILDERS'

Index

- |                                     |                      |
|-------------------------------------|----------------------|
| 1. Applicable Publications          | 7. Fastenings        |
| 2. General                          | 8. Keying            |
| 3. Templates                        | 9. Locks and Latches |
| 4. Submittals                       | 10. Butts and Hinges |
| 5. Packaging, Marking, and Labeling | 11. Miscellaneous    |
| 6. Finishes                         | 12. Application      |
|                                     | 13. Hardware Sets    |

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

1.1 American National Standards Institute (ANSI) Standards.

A156.1-1976	Butts and Hinges
A156.2-1976	Locks and Lock Trim
A156.7-1972	Template Hinge Dimensions

1.2 American Society of Architectural Hardware Consultants (ASAHC) Publication.

Keying-Procedures, Systems and Nomenclature. (Jan 1978).

1.3 Builders Hardware Manufacturers Association (BHMA) Standards.

1301-1969 (Rev. 1977)	Materials and Finishes
-----------------------	------------------------

1.4 Door and Hardware Institute (DHI) Publication.

Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames (1975).

2. GENERAL. Hardware shall conform to the applicable requirements of the standards listed herein, unless otherwise specified. Reinforcement for hardware in metal frames shall be as specified in section: STEEL DOORS AND FRAMES.

3. TEMPLATES. The Contractor shall furnish templates or information otherwise necessary to enable the door and frame manufacturer to make proper provision in his work to receive the specified hardware. Where two or more articles of hardware are to be mounted on the same door, the Contractor shall effect proper coordination between the manufacturers of the different articles. Templates of hinges shall conform to ANSI A156.7

4. SUBMITTALS.

4.1 Certificates of Compliance. Certificates of compliance attesting that hardware items conform to the ANSI or BHMA standards under which the items are

specified shall be submitted in accordance with the SPECIAL PROVISIONS. A statement that the proposed hardware items appear in the current applicable BHMA Certified Products Directory may be submitted in lieu of certificates.

4.2 Hardware Schedule. Hardware schedule shall list all of the materials to be furnished and shall be submitted to the Contracting Officer for approval. The schedule shall include for each item; the quantities, manufacturer's catalog numbers, hinge sizes, detail information and location and hardware set identification, corresponding ANSI or BHMA standard type or function number to manufacturer's catalog number, complete keying schedule, and list of abbreviation and template numbers. The keying schedule shall be developed in accordance with ASAHC publication "Keying-Procedures, Systems and Nomenclature."

5. PACKING, MARKING, AND LABELING. Hardware shall be delivered to the project site in the manufacturer's original packages. Each article of hardware shall be individually packaged in the manufacturer's standard commercial carton or container, properly marked or labeled so as to be readily identifiable with the approved hardware schedule. Each change-key shall be tagged or otherwise identified with the door for which its cylinder is intended. Where double cylinder functions are used where it is not obvious which is the key side of the door, appropriate instructions shall be included with the lock and on the hardware schedule.

6. FINISHES of the following types shall conform to the finishes identified under BHMA 1301, and shall conform to the requirements of the standard under which the item is specified. Base materials shall be of the material identified by the finish number.

6.1 Hinges. Hinge finish shall be 612.

6.2 Lock and Door Trim Finishes. Lock and door trim finishes shall be 625.

7. FASTENINGS of proper type, size, quantity, and finish shall be supplied with each article of hardware. Machine screws and expansion shields shall be used for attaching hardware to concrete. Fastenings exposed to the weather in the finished work shall be of brass, bronze, or stainless steel, as applicable.

8. KEYING. Cylinder locks shall be keyed in sets as scheduled. Keys for cylinder locks shall be stamped with change number and the inscription "Do Not Duplicate".

Cylinder locks                      2 change keys each lock.

The keys shall be turned over to the Contracting Officer properly tagged and designated as to location.

9. LOCKS AND LATCHES. Manufacturers' standard plain design shall be used.

9.1 Cylinder Locks. Cylinders shall have five pins with eccentric keyway. Cylinders for cylinder locks, and the cylinder locks, shall be the product of the same manufacturer.

9.2 Locksets and Latchsets. Locksets and latchsets shall conform to ANSI A156.2, conforming to series 4,000, Grade 1.

10. BUTTS AND HINGES. Hinges shall conform to ANSI A156.1 and A 156.7, type A 8111, NRP.

10.1 Hinges for Reverse Bevel Doors with Locks. Hinges for reverse bevel doors with locks shall have pins that are made nonremovable by means such as a set screw in the barrel, or safety stud, when the door is in the closed position.

10.2 Contractor's Option. Hinges with anti-friction bearings may be furnished in lieu of ball bearing hinges.

11. MISCELLANEOUS.

11.1 Metal Treshold. Threshold shall be as specified in section: STEEL DOORS AND FRAMES.

12. APPLICATION. Hardware shall be located on doors in accordance with DHI "Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames." When approved, slight variations in locations or dimensions will be permitted.

13. HARDWARE SET shall be as follows:

HW-1	1-1/2 pr.	4" x 4" Butts
	1 ea.	Lockset, F86
	1 ea.	Threshold

\* \* \* \* \*

SECTION 10A

STATION MARKING

Index

- |                            |   |
|----------------------------|---|
| 1. Applicable Publications | 4. Painting                                       |
| 2. Materials               | 5. Tabulation of Location and<br>Text of Markings |
| 3. Installation            |   |

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

1.1 Federal Specifications (Fed. Spec.).

TT-P-115E

Paint, Traffic, Highway, White and  
Yellow

2. **MATERIALS.**

2.1 Paint.

2.1.1 Exterior Paint on Concrete shall conform to Fed. Spec. TT-P-115, except the color shall be non-fading black.

2.2 Concrete for markers and setting marker posts shall conform to the applicable requirements of the section: CONCRETE.

3. **INSTALLATION.**

3.1 General. The intersection of the channel center line with the center lines of new, relocated, and existing facilities such as bridges, underground utility crossings, upstream and downstream limits of permanent work, and other required information shall be marked by painting station numbers and additional identifying data as listed in the tabulation of location and text of markings. All markings shall be painted either on concrete walls headwalls, abutments, etc.) or on concrete markers as indicated.

3.2 Concrete Markers shall be 24 inches long, 18 inches wide, and a minimum of 3-5/8 inches thick. Markers may be poured in place or precast. The top surface of each marker shall be set flush with the top of berm and the longer side aligned along the edge of berm.

4. **PAINTING.**

4.1 Preparation of Surfaces. Concrete surfaces shall be thoroughly cleaned of all curing compound, efflorescence, dirt, oil or other deleterious material by approved methods. The surface preparation shall be accomplished in such manner that paint will satisfactorily adhere to the surface.

4.2 Application. Painting shall be done in a neat and workmanlike manner and may be applied by brush, spray, roller or any combination of these methods. Painting of numbers and letters shall be accomplished with stencils and brush or spray application. Color for letters and numbers shall be black. All markings on concrete shall be in uniform capital block letters and numbers, 6 inches high, 3 inches wide, and 3/4-inch width of line. Markings on concrete walls shall be

horizontal with the bottom of the marking not lower than 2 feet below the top of the wall. Markings on concrete markers shall be read from the center of the berm.

5. TABULATION OF LOCATION AND TEXT OF MARKINGS.

5.1 Abbreviations. The following abbreviations shall be used where applicable. All other words shall be spelled out.

Description	Abbreviation
Bridge	BR
Bridge, Pedestrian or Foot	FT BR
Sewerline	S
Waterline	W
Telephone Conduits	
(1) Number and Multiple Duct (with concrete encasement)	(10) MD - T
Inspection Manhole	IM

5.2 Tabulation.

Location of Marking based on Interceptor Channel Stations

Wall or Bank	Interceptor Channel Station	Marking Painted on	Text of Marking	Remarks
L	74+75	CM	74+75 W-8	
L	48+00	CM	48+00 IM	
R	47+90	CM	47+90 S-8	
L	19+90	CW	19+90 (10) MD-T	
L	19+73	CW	19+73 S-36	
L	19+58	CW	19+58 W-14	
L	19+35	CW	19+35 BR	
L	4+50	CM	4+50	Confluence with inlet channel

R = Right Bank (Looking Downstream)  
 L = Left Bank (Looking Downstream)  
 CW = Concrete Wall  
 CM = Concrete Marker

5.3 "As Constructed" - Corrections. The above tabulation is based on project drawings. Where the "As Constructed" condition will deviate from the data contained in the above tabulation, the "As Constructed" condition shall be used for markings, with station numbers rounded off to the nearest foot.

\* \* \* \* \*

U.S. ARMY ENGINEER DISTRICT, LOS ANGELES  
 300 North Los Angeles Street  
 Los Angeles, California

ARMY - C. of E. - Los Angeles