



**SUBMITTAL TO THE FLOOD CONTROL AND WATER CONSERVATION DISTRICT BOARD
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

406 B

FROM: General Manager-Chief Engineer

SUBMITTAL DATE:
February 26, 2013

SUBJECT: Project Award - Eagle Canyon Dam and Debris Basin
Project No. 6-0-00190
District 4/District 4

RECOMMENDED MOTION:

The Board relieve Vance Corporation of its bid as requested in its January 24, 2013 letter (copy attached), pursuant to Public Contract Code Section 5101.

The Board approve the second bid submitted by the firm of Hal Hays Construction, Inc. for \$9,849,777.00, for the construction of the above referenced project.

Authorize the Chairman to execute the contract on behalf of the District.

BACKGROUND:

The bid documents have been reviewed and approved for award by County Counsel.

FINANCIAL:

Funds are included in the District's FY 2012-2013 Zone 6 budget for this project.

Steve Thomas

FOR **WARREN D. WILLIAMS**
General Manager-Chief Engineer

| | | | | |
|-----------------------|-----------------------------|----------------|-------------------------|-----------|
| FINANCIAL DATA | Current F.Y. District Cost: | \$9,849,777.00 | In Current Year Budget: | Yes |
| | Current F.Y. County Cost: | N/A | Budget Adjustment: | No |
| | Annual Net District Cost: | N/A | For Fiscal Year: | 2012-2013 |

| | | |
|--|----------------------------------|--------------------------|
| SOURCE OF FUNDS: 25160 947500 527980 Zone 6 Const/Maint/Misc-Contracts | Positions To Be Deleted Per A-30 | <input type="checkbox"/> |
| | Requires 4/5 Vote | <input type="checkbox"/> |

C.E.O. RECOMMENDATION: APPROVE

BY: *Debra Cournoyer*
Debra Cournoyer

County Executive Office Signature

MINUTES OF THE FLOOD CONTROL AND WATER CONSERVATION DISTRICT

On motion of Supervisor Stone, seconded by Supervisor Ashley and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Tavaglione, Stone, Benoit and Ashley
Nays: None
Absent: None
Date: February 26, 2013
xc: Flood

Kecia Harper-Ihem
Clerk of the Board
By: *[Signature]*
Deputy

Prev. Agn. Ref.: 11.11 of 11/06/12 | District: 4th/4th | Agenda Number:

11-2

FORM APPROVED BY COUNTY COUNSEL
DATE
BY: NEAL R. KIPNIS
FISCAL PROCEDURES APPROVED BY JEANINE J. REY, FINANCE DIRECTOR
BY: *[Signature]* 2/13/13
JEANINE J. REY

Vance Corporation

General Engineering Contractor
License No. 414567-A

2271 N. Locust Ave., Rialto, CA 92377 • (909) 355-4333 • Fax No. (909) 355-4339

Riverside County Flood Control
And Water Conservation District
1995 Market Street
Riverside, CA 92501

January 24, 2013

Attention: Mr. Kent Allen, P.E.
Engineering Project Manager

Reference: Eagle Canyon Dam and Debris Basin
Project No. 6-0-0190

RECEIVED
JAN 24 2013

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

Pursuant to Public Contract Code Section 5103, we hereby submit our written notice that a mistake was made in the preparation of our Bid for the Eagle Canyon Dam and Debris Basin project which was submitted on January 17, 2013.

The mistake was made in filling out the production rate for the Crushing and Screening operations necessary to manufacture the Dam Embankment Core and Shell materials. In lieu of the intended rate of 1200 tons per shift, the calculation was made at 1200 cubic yards per shift. This error resulted in a bid cost that is \$ 586,000.00 lower than we intended. After analyzing all aspects of our bid, we are convinced that this mistake cannot be overcome by any other means available.

We hereby request relief from the obligation of our Bid Bond due to the abovementioned mistake in filling out the bid.

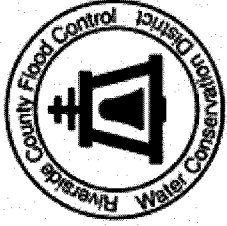
We appreciate your prompt attention to this request. If you have any questions, please feel free to call me at (909) 355-4333.

Sincerely,
VANCE CORPORATION


Verner E. Thomas
President

Riverside County Flood Control & Water Conservation District

1995 Market St. Riverside, CA 92501 Phone: 951.955.1200 Fax: 951.788.9965



Bid Summary

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

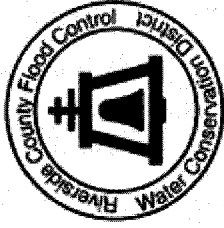
Bid Open Date: 01/17/2013

| Total | Contractor Name | Address | Phone |
|--|---|--|--------------|
| Requested/Granted Relief of Bid \$8,698,968.00 VANCE CORPORATION | | 2271 N. Leeust Avenue Rialto, CA 92377 | 909.355.4333 |
| \$9,849,777.00 | HAL HAYS CONSTRUCTION, INC. | 4181 Latham Street Riverside, CA 92501 | 951.788.0703 |
| \$10,480,541.00 | SUKUT CONSTRUCTION, INC. | 4010 West Chandler Avenue Santa Ana, CA 92704 | |
| \$10,562,256.00 | HARPER CONTRACTING, INC. | Post Office Box 16007 Salt Lake City, UT 84116 | 801.326.1016 |
| \$10,914,699.00 | SPIESS CONSTRUCTION CO., INC. | Post Office Box 2849 Santa Maria, CA 93457 | 805.937.5859 |
| \$11,777,770.00 | MINAKO AMERICA CORPORATION dba MINCO CONSTRUCTION | 522 East Airline Way Gardena, CA 90248 | 310.516.8100 |
| \$12,120,421.00 | WOOD BROS., INC. | 14147 18th Avenue Lemoore, CA 93245 | 559.924-7715 |
| \$16,175,945.00 | NORDIC INDUSTRIES, INC. | 1437 Furmeaux Road Olivehurst, CA 95961 | 530.742.7124 |

\$10,546,542.00 RCFC Engineer's Estimate

Riverside County Flood Control & Water Conservation District

1995 Market St. Riverside, CA 92501 Phone: 951.955.1200 Fax: 951.788.9965



Bid Abstract

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

ENGINEER'S ESTIMATE

VANCE-CORPORATION

HAL HAYS

CONSTRUCTION, INC.

| Item No. & Description | Unit | Quantity | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
|--|------|----------|--------------|----------------|--------------|----------------|--------------|----------------|
| 1 MOBILIZATION | L.S. | 1 | \$250,000.00 | \$250,000.00 | \$368,608.00 | \$368,608.00 | \$883,990.00 | \$883,990.00 |
| 2 WATER CONTROL | L.S. | 1 | \$30,000.00 | \$30,000.00 | \$9,000.00 | \$9,000.00 | \$10,500.00 | \$10,500.00 |
| 3 CLEARING AND MISCELLANEOUS WORK | L.S. | 1 | \$70,000.00 | \$70,000.00 | \$36,000.00 | \$36,000.00 | \$160,000.00 | \$160,000.00 |
| 4 EXTRA DIRECTED WORK | L.S. | 1 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 |
| 5 DUMPED FILL REMOVAL | C.Y. | 65,000 | \$5.00 | \$325,000.00 | \$6.00 | \$390,000.00 | \$15.50 | \$1,007,500.00 |
| 6 REMOVAL OF SURFICIAL SHOOTING RANGE DEBRIS | C.Y. | 75 | \$4.00 | \$300.00 | \$100.00 | \$7,500.00 | \$142.00 | \$10,650.00 |
| 7 EXCAVATION AND STOCKPILING OF SUBSURFACE SHOOTING RANGE DEBRIS AND IMPACTED SOIL | C.Y. | 2,925 | \$5.00 | \$14,625.00 | \$10.00 | \$29,250.00 | \$22.00 | \$64,350.00 |
| 8 CONFIRMATION SOIL SAMPLING | EACH | 25 | \$83.00 | \$2,075.00 | \$250.00 | \$6,250.00 | \$277.00 | \$6,925.00 |
| 9 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-HAZARDOUS) | TONS | 11,250 | \$40.00 | \$450,000.00 | \$85.00 | \$956,250.00 | \$44.00 | \$495,000.00 |
| 10 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (RCRA) | TONS | 1,500 | \$252.00 | \$378,000.00 | \$275.00 | \$412,500.00 | \$200.00 | \$300,000.00 |
| 11 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-RCRA) | TONS | 1,500 | \$250.00 | \$375,000.00 | \$100.00 | \$150,000.00 | \$75.00 | \$112,500.00 |
| 12 FINAL CLOSURE REPORT | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$5,000.00 | \$5,000.00 | \$11,500.00 | \$11,500.00 |
| 13 UNDERGROUND STORAGE TANK (UST) REMOVAL | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$5,000.00 | \$5,000.00 | \$4,100.00 | \$4,100.00 |
| 14 BASIN EXCAVATION | C.Y. | 31,030 | \$4.00 | \$124,120.00 | \$4.00 | \$124,120.00 | \$5.00 | \$155,150.00 |
| 15 BASIN EXCAVATION (ROCK) | C.Y. | 4,000 | \$20.00 | \$80,000.00 | \$8.00 | \$32,000.00 | \$16.35 | \$65,400.00 |
| 16 ABUTMENT EXCAVATION AND SHAPING (ROCK) | C.Y. | 52,500 | \$30.00 | \$1,575,000.00 | \$8.00 | \$420,000.00 | \$10.00 | \$525,000.00 |
| 17 DAM FOUNDATION EXCAVATION | C.Y. | 90,000 | \$4.00 | \$360,000.00 | \$3.00 | \$270,000.00 | \$2.00 | \$180,000.00 |
| 18 SPILLWAY EXCAVATION | C.Y. | 41,140 | \$30.00 | \$1,234,200.00 | \$8.00 | \$329,120.00 | \$10.00 | \$411,400.00 |
| 19 STILLING BASIN EXCAVATION | C.Y. | 6,770 | \$5.00 | \$33,850.00 | \$4.00 | \$27,080.00 | \$2.40 | \$16,248.00 |
| 20 ACCESS ROAD EXCAVATION (ROCK) | C.Y. | 7,310 | \$20.00 | \$146,200.00 | \$8.00 | \$58,480.00 | \$13.75 | \$100,512.50 |
| 21 OUTLET PIPE TRENCH EXCAVATION | C.Y. | 2,320 | \$3.00 | \$6,960.00 | \$4.00 | \$9,280.00 | \$9.50 | \$22,040.00 |
| 22 OUTLET CHANNEL EXCAVATION | C.Y. | 6,380 | \$3.00 | \$19,140.00 | \$5.00 | \$31,900.00 | \$3.30 | \$21,054.00 |
| 23 DAM EMBANKMENT CORE | C.Y. | 32,300 | \$14.00 | \$452,200.00 | \$12.00 | \$387,600.00 | \$12.00 | \$387,600.00 |
| 24 DAM EMBANKMENT (UPSTREAM AND DOWNSTREAM SHELLS) | C.Y. | 156,000 | \$8.00 | \$1,248,000.00 | \$11.50 | \$1,794,000.00 | \$11.00 | \$1,716,000.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

ENGINEER'S ESTIMATE

VANCE CORPORATION

HAL HAYS

CONSTRUCTION, INC.

| Item No. & Description | Unit | Quantity | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
|--|-------------|-----------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|
| 25 BACKFILL FOR STILLING BASIN | C.Y. | 7,980 | \$8.00 | \$63,840.00 | \$12.00 | \$95,760.00 | \$3.00 | \$23,940.00 |
| 26 FILL FOR ACCESS ROADS | C.Y. | 22,780 | \$6.00 | \$136,680.00 | \$12.00 | \$273,360.00 | \$2.20 | \$50,116.00 |
| 27 TRENCH SAFETY SYSTEM | L.S. | 1 | \$15,000.00 | \$15,000.00 | \$500.00 | \$500.00 | \$1,150.00 | \$1,150.00 |
| 28 PERSONAL PROTECTIVE EQUIPMENT, OSHA TRAINING AND FITNESS TEST | L.S. | 1 | \$15,000.00 | \$15,000.00 | \$5,000.00 | \$5,000.00 | \$11,500.00 | \$11,500.00 |
| 29 CLASS "A" CONCRETE, PIPE CRADLE | C.Y. | 178 | \$700.00 | \$124,600.00 | \$340.00 | \$60,520.00 | \$360.00 | \$64,080.00 |
| 30 CLASS "A" CONCRETE, INTAKE STRUCTURE | C.Y. | 38 | \$700.00 | \$26,600.00 | \$1,300.00 | \$49,400.00 | \$790.00 | \$30,020.00 |
| 31 CLASS "A" CONCRETE, STILLING BASIN STRUCTURE | C.Y. | 921 | \$700.00 | \$644,700.00 | \$600.00 | \$552,600.00 | \$580.00 | \$534,180.00 |
| 32 CLASS "A" CONCRETE, OUTLET HEADWALL | C.Y. | 37 | \$700.00 | \$25,900.00 | \$760.00 | \$28,120.00 | \$802.00 | \$29,674.00 |
| 33 CLASS "B" CONCRETE, CUTOFF WALL | C.Y. | 26 | \$500.00 | \$13,000.00 | \$930.00 | \$24,180.00 | \$655.00 | \$17,030.00 |
| 34 CLASS "B" CONCRETE, SILL AT SPILLWAY CREST | C.Y. | 6 | \$500.00 | \$3,000.00 | \$600.00 | \$3,600.00 | \$435.00 | \$2,610.00 |
| 35 CLASS "B" CONCRETE, V-DITCH | C.Y. | 37 | \$250.00 | \$9,250.00 | \$950.00 | \$35,150.00 | \$645.00 | \$23,865.00 |
| 36 CLASS "B" CONCRETE, MISCELLANEOUS | C.Y. | 78 | \$500.00 | \$39,000.00 | \$490.00 | \$38,220.00 | \$1,945.00 | \$151,710.00 |
| 37 SLUSH GROUT, DENTAL AND BACKFILL CONCRETE | C.Y. | 1,000 | \$150.00 | \$150,000.00 | \$275.00 | \$275,000.00 | \$287.00 | \$287,000.00 |
| 38 42-INCH REINFORCED CONCRETE PRESSURE PIPE (RCPP), 4000D | L.F. | 310 | \$400.00 | \$124,000.00 | \$150.00 | \$46,500.00 | \$139.00 | \$43,090.00 |
| 39 6-FOOT CHAIN LINK FENCE | L.F. | 1,630 | \$16.00 | \$26,080.00 | \$27.00 | \$44,010.00 | \$26.00 | \$42,380.00 |
| 40 14-FOOT DOUBLE DRIVE GATES | EACH | 1 | \$1,500.00 | \$1,500.00 | \$2,300.00 | \$2,300.00 | \$2,220.00 | \$2,220.00 |
| 41 STEEL GRATES FOR INTAKE STRUCTURE | L.S. | 1 | \$15,000.00 | \$15,000.00 | \$18,500.00 | \$18,500.00 | \$23,750.00 | \$23,750.00 |
| 42 24-INCH SIDE INLET DRAIN PIPE | L.S. | 1 | \$15,000.00 | \$15,000.00 | \$20,000.00 | \$20,000.00 | \$9,200.00 | \$9,200.00 |
| 43 WEEP HOLES ON SPILLWAY CHANNEL | L.F. | 80 | \$200.00 | \$16,000.00 | \$75.00 | \$6,000.00 | \$4.00 | \$320.00 |
| 44 LEACHFIELD DRAINS | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$22,000.00 | \$22,000.00 | \$73,500.00 | \$73,500.00 |
| 45 ROCK SLOPE PROTECTION, 1-TON CLASS | TONS | 1,800 | \$50.00 | \$90,000.00 | \$25.00 | \$45,000.00 | \$45.00 | \$81,000.00 |
| 46 ROCK SLOPE PROTECTION, 1/2-TON CLASS | TONS | 630 | \$50.00 | \$31,500.00 | \$25.00 | \$15,750.00 | \$46.25 | \$29,137.50 |
| 47 ROCK SLOPE PROTECTION, 1/4-TON CLASS | TONS | 21,000 | \$50.00 | \$1,050,000.00 | \$25.00 | \$525,000.00 | \$40.00 | \$840,000.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

ENGINEER'S ESTIMATE

VANCE CORPORATION

HAL HAYS
CONSTRUCTION, INC.

| Item No. & Description | Unit | Quantity | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
|---|------|----------|-------------|--------------|-------------|--------------|-------------|--------------|
| 48 ROCK SLOPE PROTECTION, LIGHT CLASS | TONS | 15 | \$50.00 | \$750.00 | \$30.00 | \$450.00 | \$80.00 | \$1,200.00 |
| 49 CRUSHED ROCK | C.Y. | 620 | \$25.00 | \$15,500.00 | \$40.00 | \$24,800.00 | \$59.00 | \$36,580.00 |
| 50 FILTER BLANKET, NO. 2 BACKING CLASS | C.Y. | 4,935 | \$50.00 | \$246,750.00 | \$40.00 | \$197,400.00 | \$74.00 | \$365,190.00 |
| 51 ROCK SLOPE PROTECTION FABRIC | S.Y. | 20,550 | \$5.00 | \$102,750.00 | \$5.00 | \$102,750.00 | \$2.10 | \$43,155.00 |
| 52 CONCRETE GROUT FOR GROUTED ROCK RIPRAP AND GROUTED NO. 2 BACKING CLASS | C.Y. | 320 | \$150.00 | \$48,000.00 | \$150.00 | \$48,000.00 | \$112.00 | \$35,840.00 |
| 53 FILTER DIAPHRAGM MATERIAL | C.Y. | 32 | \$46.00 | \$1,472.00 | \$30.00 | \$960.00 | \$135.00 | \$4,320.00 |
| 54 DUST ABATEMENT | L.S. | 1 | \$40,000.00 | \$40,000.00 | \$18,000.00 | \$18,000.00 | \$28,600.00 | \$28,600.00 |
| 55 STORMWATER AND NON-STORMWATER POLLUTION CONTROL | L.S. | 1 | \$30,000.00 | \$30,000.00 | \$36,000.00 | \$36,000.00 | \$75,000.00 | \$75,000.00 |
| 56 COLOR VARNISH | S.F. | 84,000 | \$0.25 | \$21,000.00 | \$0.30 | \$25,200.00 | \$0.25 | \$21,000.00 |

\$10,546,542.00

\$8,698,968.00

\$9,849,777.00

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

| Item No. & Description | Unit | Quantity | SUKUT CONSTRUCTION, INC. | | HARPER CONTRACTING, INC. | | SPIESS CONSTRUCTION CO., INC. | |
|--|------|----------|--------------------------|----------------|--------------------------|----------------|-------------------------------|----------------|
| | | | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
| 1 MOBILIZATION | L.S. | 1 | \$665,000.00 | \$665,000.00 | \$350,000.00 | \$350,000.00 | \$585,000.00 | \$585,000.00 |
| 2 WATER CONTROL | L.S. | 1 | \$40,000.00 | \$40,000.00 | \$17,300.00 | \$17,300.00 | \$22,000.00 | \$22,000.00 |
| 3 CLEARING AND MISCELLANEOUS WORK | L.S. | 1 | \$50,000.00 | \$50,000.00 | \$73,300.00 | \$73,300.00 | \$270,000.00 | \$270,000.00 |
| 4 EXTRA DIRECTED WORK | L.S. | 1 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 |
| 5 DUMPED FILL REMOVAL | C.Y. | 65,000 | \$22.00 | \$1,430,000.00 | \$13.90 | \$903,500.00 | \$8.40 | \$546,000.00 |
| 6 REMOVAL OF SURFICIAL SHOOTING RANGE DEBRIS | C.Y. | 75 | \$276.00 | \$20,700.00 | \$52.00 | \$3,900.00 | \$216.00 | \$16,200.00 |
| 7 EXCAVATION AND STOCKPILING OF SUBSURFACE SHOOTING RANGE DEBRIS AND IMPACTED SOIL | C.Y. | 2,925 | \$14.00 | \$40,950.00 | \$12.30 | \$35,977.50 | \$18.00 | \$52,650.00 |
| 8 CONFIRMATION SOIL SAMPLING | EACH | 25 | \$660.00 | \$16,500.00 | \$900.00 | \$22,500.00 | \$920.00 | \$23,000.00 |
| 9 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-HAZARDOUS) | TONS | 11,250 | \$61.00 | \$686,250.00 | \$58.50 | \$658,125.00 | \$63.00 | \$708,750.00 |
| 10 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (RCRA) | TONS | 1,500 | \$220.00 | \$330,000.00 | \$176.00 | \$264,000.00 | \$240.00 | \$360,000.00 |
| 11 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-RCRA) | TONS | 1,500 | \$81.00 | \$121,500.00 | \$61.00 | \$91,500.00 | \$105.00 | \$157,500.00 |
| 12 FINAL CLOSURE REPORT | L.S. | 1 | \$12,000.00 | \$12,000.00 | \$10,000.00 | \$10,000.00 | \$11,000.00 | \$11,000.00 |
| 13 UNDERGROUND STORAGE TANK (UST) REMOVAL | L.S. | 1 | \$2,500.00 | \$2,500.00 | \$5,000.00 | \$5,000.00 | \$26,500.00 | \$26,500.00 |
| 14 BASIN EXCAVATION | C.Y. | 31,030 | \$3.30 | \$102,399.00 | \$6.75 | \$209,452.50 | \$6.50 | \$201,695.00 |
| 15 BASIN EXCAVATION (ROCK) | C.Y. | 4,000 | \$11.50 | \$46,000.00 | \$15.70 | \$62,800.00 | \$18.00 | \$72,000.00 |
| 16 ABUTMENT EXCAVATION AND SHAPING (ROCK) | C.Y. | 52,500 | \$12.80 | \$672,000.00 | \$12.90 | \$677,250.00 | \$11.35 | \$595,875.00 |
| 17 DAM FOUNDATION EXCAVATION | C.Y. | 90,000 | \$3.70 | \$333,000.00 | \$3.90 | \$351,000.00 | \$6.50 | \$585,000.00 |
| 18 SPILLWAY EXCAVATION | C.Y. | 41,140 | \$11.50 | \$473,110.00 | \$7.90 | \$325,006.00 | \$12.00 | \$493,680.00 |
| 19 STILLING BASIN EXCAVATION | C.Y. | 6,770 | \$4.00 | \$27,080.00 | \$9.50 | \$64,315.00 | \$4.70 | \$31,819.00 |
| 20 ACCESS ROAD EXCAVATION (ROCK) | C.Y. | 7,310 | \$12.00 | \$87,720.00 | \$6.00 | \$43,860.00 | \$11.40 | \$83,334.00 |
| 21 OUTLET PIPE TRENCH EXCAVATION | C.Y. | 2,320 | \$13.40 | \$31,088.00 | \$8.90 | \$20,648.00 | \$3.80 | \$8,816.00 |
| 22 OUTLET CHANNEL EXCAVATION | C.Y. | 6,380 | \$3.00 | \$19,140.00 | \$6.15 | \$39,237.00 | \$4.20 | \$26,796.00 |
| 23 DAM EMBANKMENT CORE | C.Y. | 32,300 | \$9.40 | \$303,620.00 | \$17.75 | \$573,325.00 | \$18.00 | \$581,400.00 |
| 24 DAM EMBANKMENT (UPSTREAM AND DOWNSTREAM SHELLS) | C.Y. | 156,000 | \$10.50 | \$1,638,000.00 | \$17.70 | \$2,761,200.00 | \$12.00 | \$1,872,000.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

| Item No. & Description | Unit | Quantity | SUKUT CONSTRUCTION, INC. | | HARPER CONTRACTING, INC. | | SPEISS CONSTRUCTION CO., INC. | |
|--|------|----------|--------------------------|--------------|--------------------------|--------------|-------------------------------|--------------|
| | | | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
| 25 BACKFILL FOR STILLING BASIN | C.Y. | 7,980 | \$13.30 | \$106,134.00 | \$39.00 | \$311,220.00 | \$17.00 | \$135,660.00 |
| 26 FILL FOR ACCESS ROADS | C.Y. | 22,780 | \$2.60 | \$59,228.00 | \$17.00 | \$387,260.00 | \$13.25 | \$301,835.00 |
| 27 TRENCH SAFETY SYSTEM | L.S. | 1 | \$3,400.00 | \$3,400.00 | \$11,000.00 | \$11,000.00 | \$3,600.00 | \$3,600.00 |
| 28 PERSONAL PROTECTIVE EQUIPMENT, OSHA TRAINING AND FITNESS TEST | L.S. | 1 | \$17,000.00 | \$17,000.00 | \$13,500.00 | \$13,500.00 | \$29,000.00 | \$29,000.00 |
| 29 CLASS "A" CONCRETE, PIPE CRADLE | C.Y. | 178 | \$679.00 | \$120,862.00 | \$700.00 | \$124,600.00 | \$438.00 | \$77,964.00 |
| 30 CLASS "A" CONCRETE, INTAKE STRUCTURE | C.Y. | 38 | \$1,800.00 | \$68,400.00 | \$1,310.00 | \$49,780.00 | \$1,975.00 | \$75,050.00 |
| 31 CLASS "A" CONCRETE, STILLING BASIN STRUCTURE | C.Y. | 921 | \$562.00 | \$517,602.00 | \$884.00 | \$814,164.00 | \$580.00 | \$534,180.00 |
| 32 CLASS "A" CONCRETE, OUTLET HEADWALL | C.Y. | 37 | \$1,013.00 | \$37,481.00 | \$501.00 | \$18,537.00 | \$790.00 | \$29,230.00 |
| 33 CLASS "B" CONCRETE, CUTOFF WALL | C.Y. | 26 | \$911.00 | \$23,686.00 | \$995.00 | \$25,870.00 | \$1,200.00 | \$31,200.00 |
| 34 CLASS "B" CONCRETE, SILL AT SPILLWAY CREST | C.Y. | 6 | \$833.00 | \$4,998.00 | \$1,010.00 | \$6,060.00 | \$920.00 | \$5,520.00 |
| 35 CLASS "B" CONCRETE, V-DITCH | C.Y. | 37 | \$760.00 | \$28,120.00 | \$575.00 | \$21,275.00 | \$570.00 | \$21,090.00 |
| 36 CLASS "B" CONCRETE, MISCELLANEOUS | C.Y. | 78 | \$236.00 | \$18,408.00 | \$695.00 | \$54,210.00 | \$295.00 | \$23,010.00 |
| 37 SLUSH GROUT, DENTAL AND BACKFILL CONCRETE | C.Y. | 1,000 | \$174.00 | \$174,000.00 | \$200.00 | \$200,000.00 | \$162.00 | \$162,000.00 |
| 38 42-INCH REINFORCED CONCRETE PRESSURE PIPE (RCPP), 4000D | L.F. | 310 | \$455.00 | \$141,050.00 | \$161.00 | \$49,910.00 | \$490.00 | \$151,900.00 |
| 39 6-FOOT CHAIN LINK FENCE | L.F. | 1,630 | \$34.00 | \$55,420.00 | \$32.50 | \$52,975.00 | \$119.00 | \$193,970.00 |
| 40 14-FOOT DOUBLE DRIVE GATES | EACH | 1 | \$3,000.00 | \$3,000.00 | \$2,879.00 | \$2,879.00 | \$1,700.00 | \$1,700.00 |
| 41 STEEL GRATES FOR INTAKE STRUCTURE | L.S. | 1 | \$27,000.00 | \$27,000.00 | \$50,000.00 | \$50,000.00 | \$20,800.00 | \$20,800.00 |
| 42 24-INCH SIDE INLET DRAIN PIPE | L.S. | 1 | \$29,000.00 | \$29,000.00 | \$12,600.00 | \$12,600.00 | \$34,600.00 | \$34,600.00 |
| 43 WEEP HOLES ON SPILLWAY CHANNEL | L.F. | 80 | \$45.00 | \$3,600.00 | \$76.00 | \$6,080.00 | \$29.00 | \$2,320.00 |
| 44 LEACH FIELD DRAINS | L.S. | 1 | \$20,000.00 | \$20,000.00 | \$12,400.00 | \$12,400.00 | \$26,000.00 | \$26,000.00 |
| 45 ROCK SLOPE PROTECTION, 1-TON CLASS | TONS | 1,800 | \$43.00 | \$77,400.00 | \$12.50 | \$22,500.00 | \$43.00 | \$77,400.00 |
| 46 ROCK SLOPE PROTECTION, 1/2-TON CLASS | TONS | 630 | \$43.00 | \$27,090.00 | \$12.50 | \$7,875.00 | \$43.00 | \$27,090.00 |
| 47 ROCK SLOPE PROTECTION, 1/4-TON CLASS | TONS | 21,000 | \$41.00 | \$861,000.00 | \$12.50 | \$262,500.00 | \$34.50 | \$724,500.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

SUKUT CONSTRUCTION, INC. HARPER CONTRACTING, INC. SPIESS CONSTRUCTION CO., INC.

| Item No. & Description | Unit | Quantity | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
|---|------|----------|--------------|------------------------|-------------|------------------------|--------------|------------------------|
| 48 ROCK SLOPE PROTECTION, LIGHT CLASS | TONS | 15 | \$75.00 | \$1,125.00 | \$38.00 | \$570.00 | \$23.00 | \$345.00 |
| 49 CRUSHED ROCK | C.Y. | 620 | \$82.00 | \$50,840.00 | \$51.00 | \$31,620.00 | \$86.00 | \$53,320.00 |
| 50 FILTER BLANKET, NO. 2 BACKING CLASS | C.Y. | 4,935 | \$81.00 | \$399,735.00 | \$19.00 | \$93,765.00 | \$44.00 | \$217,140.00 |
| 51 ROCK SLOPE PROTECTION FABRIC | S.Y. | 20,550 | \$1.90 | \$39,045.00 | \$3.00 | \$61,650.00 | \$1.40 | \$28,770.00 |
| 52 CONCRETE GROUT FOR GROUTED ROCK RIPRAP AND GROUTED NO. 2 BACKING CLASS | C.Y. | 320 | \$153.00 | \$48,960.00 | \$100.00 | \$32,000.00 | \$150.00 | \$48,000.00 |
| 53 FILTER DIAPHRAGM MATERIAL | C.Y. | 32 | \$70.00 | \$2,240.00 | \$50.00 | \$1,600.00 | \$1,970.00 | \$63,040.00 |
| 54 DUST ABATEMENT | L.S. | 1 | \$44,000.00 | \$44,000.00 | \$13,500.00 | \$13,500.00 | \$175,000.00 | \$175,000.00 |
| 55 STORMWATER AND NON-STORMWATER POLLUTION CONTROL | L.S. | 1 | \$102,000.00 | \$102,000.00 | \$21,960.00 | \$21,960.00 | \$70,650.00 | \$70,650.00 |
| 56 COLOR VARNISH | S.F. | 84,000 | \$0.24 | \$20,160.00 | \$0.30 | \$25,200.00 | \$0.45 | \$37,800.00 |
| | | | | \$10,480,541.00 | | \$10,562,256.00 | | \$10,914,699.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

MINAKO AMERICA CORPORATION dba

WOOD BROS., INC.

NORDIC INDUSTRIES, INC.

| Item No. & Description | Unit | Quantity | MINCO CONSTRUCTION | | WOOD BROS., INC. | | NORDIC INDUSTRIES, INC. | |
|---|------|----------|--------------------|----------------|------------------|----------------|-------------------------|----------------|
| | | | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
| 1 MOBILIZATION | L.S. | 1 | \$500,000.00 | \$500,000.00 | \$513,000.00 | \$513,000.00 | \$515,000.00 | \$515,000.00 |
| 2 WATER CONTROL | L.S. | 1 | \$500,000.00 | \$500,000.00 | \$59,760.00 | \$59,760.00 | \$50,000.00 | \$50,000.00 |
| 3 CLEARING AND MISCELLANEOUS WORK | L.S. | 1 | \$500,000.00 | \$500,000.00 | \$44,200.00 | \$44,200.00 | \$50,000.00 | \$50,000.00 |
| 4 EXTRA DIRECTED WORK | L.S. | 1 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 | \$200,000.00 |
| 5 DUMPED FILL REMOVAL | C.Y. | 65,000 | \$20.00 | \$1,300,000.00 | \$5.11 | \$332,150.00 | \$13.00 | \$845,000.00 |
| 6 REMOVAL OF SURFICIAL SHOOTING RANGE DEBRIS | C.Y. | 75 | \$200.00 | \$15,000.00 | \$55.00 | \$4,125.00 | \$1,000.00 | \$75,000.00 |
| 7 EXCAVATION AND STOCKPIILING OF SUBSURFACE SHOOTING RANGE DEBRIS AND IMPACTED SOIL | C.Y. | 2,925 | \$20.00 | \$58,500.00 | \$66.00 | \$193,050.00 | \$300.00 | \$877,500.00 |
| 8 CONFIRMATION SOIL SAMPLING | EACH | 25 | \$500.00 | \$12,500.00 | \$550.00 | \$13,750.00 | \$1,000.00 | \$25,000.00 |
| 9 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-HAZARDOUS) | TONS | 11,250 | \$50.00 | \$562,500.00 | \$41.50 | \$466,875.00 | \$95.00 | \$1,068,750.00 |
| 10 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (RCRA) | TONS | 1,500 | \$100.00 | \$150,000.00 | \$197.42 | \$296,130.00 | \$200.00 | \$300,000.00 |
| 11 WASTE PROFILING, TRANSPORTATION AND DISPOSAL (NON-RCRA) | TONS | 1,500 | \$200.00 | \$300,000.00 | \$67.99 | \$101,985.00 | \$125.00 | \$187,500.00 |
| 12 FINAL CLOSURE REPORT | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$3,850.00 | \$3,850.00 | \$5,000.00 | \$5,000.00 |
| 13 UNDERGROUND STORAGE TANK (UST) REMOVAL | L.S. | 1 | \$15,000.00 | \$15,000.00 | \$3,770.00 | \$3,770.00 | \$15,000.00 | \$15,000.00 |
| 14 BASIN EXCAVATION | C.Y. | 31,030 | \$10.00 | \$310,300.00 | \$3.30 | \$102,399.00 | \$8.00 | \$248,240.00 |
| 15 BASIN EXCAVATION (ROCK) | C.Y. | 4,000 | \$20.00 | \$80,000.00 | \$12.55 | \$50,200.00 | \$20.00 | \$80,000.00 |
| 16 ABUTMENT EXCAVATION AND SHAPING (ROCK) | C.Y. | 52,500 | \$10.00 | \$525,000.00 | \$13.10 | \$687,750.00 | \$20.00 | \$1,050,000.00 |
| 17 DAM FOUNDATION EXCAVATION | C.Y. | 90,000 | \$10.00 | \$900,000.00 | \$2.77 | \$249,300.00 | \$22.00 | \$1,980,000.00 |
| 18 SPILLWAY EXCAVATION | C.Y. | 41,140 | \$10.00 | \$411,400.00 | \$3.10 | \$127,534.00 | \$20.00 | \$822,800.00 |
| 19 STILLING BASIN EXCAVATION | C.Y. | 6,770 | \$10.00 | \$67,700.00 | \$3.10 | \$20,987.00 | \$10.00 | \$67,700.00 |
| 20 ACCESS ROAD EXCAVATION (ROCK) | C.Y. | 7,310 | \$10.00 | \$73,100.00 | \$9.60 | \$70,176.00 | \$20.00 | \$146,200.00 |
| 21 OUTLET PIPE TRENCH EXCAVATION | C.Y. | 2,320 | \$10.00 | \$23,200.00 | \$12.60 | \$29,232.00 | \$15.00 | \$34,800.00 |
| 22 OUTLET CHANNEL EXCAVATION | C.Y. | 6,380 | \$10.00 | \$63,800.00 | \$11.90 | \$75,922.00 | \$8.00 | \$51,040.00 |
| 23 DAM EMBANKMENT CORE | C.Y. | 32,300 | \$10.00 | \$323,000.00 | \$17.97 | \$580,431.00 | \$34.00 | \$1,098,200.00 |
| 24 DAM EMBANKMENT (UPSTREAM AND DOWNSTREAM SHELLS) | C.Y. | 156,000 | \$3.00 | \$468,000.00 | \$19.68 | \$3,070,080.00 | \$16.00 | \$2,496,000.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

MINAKO AMERICA CORPORATION dba MINCO CONSTRUCTION

WOOD BROS., INC.

NORDIC INDUSTRIES, INC.

| Item No. & Description | Unit | Quantity | MINCO CONSTRUCTION | | WOOD BROS., INC. | | NORDIC INDUSTRIES, INC. | |
|--|------|----------|--------------------|----------------|------------------|--------------|-------------------------|--------------|
| | | | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
| 25 BACKFILL FOR STILLING BASIN | C.Y. | 7,980 | \$10.00 | \$79,800.00 | \$12.80 | \$102,144.00 | \$25.00 | \$199,500.00 |
| 26 FILL FOR ACCESS ROADS | C.Y. | 22,780 | \$5.00 | \$113,900.00 | \$12.80 | \$291,584.00 | \$25.00 | \$569,500.00 |
| 27 TRENCH SAFETY SYSTEM | L.S. | 1 | \$210,000.00 | \$210,000.00 | \$5,000.00 | \$5,000.00 | \$20,000.00 | \$20,000.00 |
| 28 PERSONAL PROTECTIVE EQUIPMENT, OSHA TRAINING AND FITNESS TEST | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$19,800.00 | \$19,800.00 | \$50,000.00 | \$50,000.00 |
| 29 CLASS "A" CONCRETE, PIPE CRADLE | C.Y. | 178 | \$1,000.00 | \$178,000.00 | \$1,383.00 | \$246,174.00 | \$800.00 | \$142,400.00 |
| 30 CLASS "A" CONCRETE, INTAKE STRUCTURE | C.Y. | 38 | \$1,000.00 | \$38,000.00 | \$1,909.00 | \$72,542.00 | \$1,500.00 | \$57,000.00 |
| 31 CLASS "A" CONCRETE, STILLING BASIN STRUCTURE | C.Y. | 921 | \$1,000.00 | \$921,000.00 | \$1,018.00 | \$937,578.00 | \$700.00 | \$644,700.00 |
| 32 CLASS "A" CONCRETE, OUTLET HEADWALL | C.Y. | 37 | \$1,000.00 | \$37,000.00 | \$1,419.00 | \$52,503.00 | \$700.00 | \$25,900.00 |
| 33 CLASS "B" CONCRETE, CUTOFF WALL | C.Y. | 26 | \$1,000.00 | \$26,000.00 | \$798.00 | \$20,748.00 | \$1,100.00 | \$28,600.00 |
| 34 CLASS "B" CONCRETE, SILL AT SPILLWAY CREST | C.Y. | 6 | \$1,000.00 | \$6,000.00 | \$754.00 | \$4,524.00 | \$1,100.00 | \$6,600.00 |
| 35 CLASS "B" CONCRETE, V-DITCH | C.Y. | 37 | \$1,000.00 | \$37,000.00 | \$297.00 | \$10,989.00 | \$1,100.00 | \$40,700.00 |
| 36 CLASS "B" CONCRETE, MISCELLANEOUS | C.Y. | 78 | \$1,000.00 | \$78,000.00 | \$1,716.00 | \$133,848.00 | \$800.00 | \$62,400.00 |
| 37 SLUSH GROUT, DENTAL AND BACKFILL CONCRETE | C.Y. | 1,000 | \$1,000.00 | \$1,000,000.00 | \$484.20 | \$484,200.00 | \$300.00 | \$300,000.00 |
| 38 42-INCH REINFORCED CONCRETE PRESSURE PIPE (RCPP), 4000D | L.F. | 310 | \$500.00 | \$155,000.00 | \$486.60 | \$150,846.00 | \$250.00 | \$77,500.00 |
| 39 6-FOOT CHAIN LINK FENCE | L.F. | 1,630 | \$50.00 | \$81,500.00 | \$32.10 | \$52,323.00 | \$35.00 | \$57,050.00 |
| 40 14-FOOT DOUBLE DRIVE GATES | EACH | 1 | \$7,000.00 | \$7,000.00 | \$3,971.00 | \$3,971.00 | \$3,000.00 | \$3,000.00 |
| 41 STEEL GRATES FOR INTAKE STRUCTURE | L.S. | 1 | \$70,000.00 | \$70,000.00 | \$12,420.00 | \$12,420.00 | \$50,000.00 | \$50,000.00 |
| 42 24-INCH SIDE INLET DRAIN PIPE | L.S. | 1 | \$10,000.00 | \$10,000.00 | \$23,995.00 | \$23,995.00 | \$15,000.00 | \$15,000.00 |
| 43 WEEP HOLES ON SPILLWAY CHANNEL | L.F. | 80 | \$100.00 | \$8,000.00 | \$33.00 | \$2,640.00 | \$15.00 | \$1,200.00 |
| 44 LEACH FIELD DRAINS | L.S. | 1 | \$100,000.00 | \$100,000.00 | \$37,267.00 | \$37,267.00 | \$50,000.00 | \$50,000.00 |
| 45 ROCK SLOPE PROTECTION, 1-TON CLASS | TONS | 1,800 | \$50.00 | \$90,000.00 | \$46.97 | \$84,546.00 | \$50.00 | \$90,000.00 |
| 46 ROCK SLOPE PROTECTION, 1/2-TON CLASS | TONS | 630 | \$50.00 | \$31,500.00 | \$47.60 | \$29,988.00 | \$50.00 | \$31,500.00 |
| 47 ROCK SLOPE PROTECTION, 1/4-TON CLASS | TONS | 21,000 | \$10.00 | \$210,000.00 | \$45.97 | \$965,370.00 | \$25.00 | \$525,000.00 |

Project Name: EAGLE CANYON DAM AND DEBRIS BASIN

Project Number: 6-0-0190-01

Bid Open Date: 01/17/2013

WOOD BROS., INC.

MINAKO AMERICA CORPORATION dba

MINCO CONSTRUCTION

NORDIC INDUSTRIES, INC.

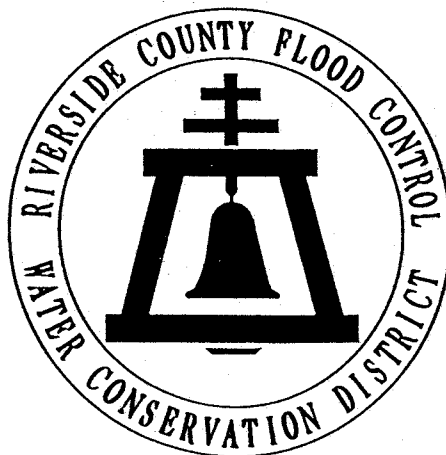
| Item No. & Description | Unit | Quantity | Unit Bid | Total Bid | Unit Bid | Total Bid | Unit Bid | Total Bid |
|---|------|----------|--------------|------------------------|------------------------|--------------|------------------------|--------------|
| 48 ROCK SLOPE PROTECTION, LIGHT CLASS | TONS | 15 | \$100.00 | \$1,500.00 | \$165.00 | \$2,475.00 | \$100.00 | \$1,500.00 |
| 49 CRUSHED ROCK | C.Y. | 620 | \$50.00 | \$31,000.00 | \$52.10 | \$32,302.00 | \$80.00 | \$49,600.00 |
| 50 FILTER BLANKET, NO. 2 BACKING CLASS | C.Y. | 4,935 | \$40.00 | \$197,400.00 | \$87.00 | \$429,345.00 | \$90.00 | \$444,150.00 |
| 51 ROCK SLOPE PROTECTION FABRIC | S.Y. | 20,550 | \$5.00 | \$102,750.00 | \$4.90 | \$100,695.00 | \$2.50 | \$51,375.00 |
| 52 CONCRETE GROUT FOR GROUTED ROCK RIPRAP AND GROUTED NO. 2 BACKING CLASS | C.Y. | 320 | \$50.00 | \$16,000.00 | \$232.30 | \$74,336.00 | \$200.00 | \$64,000.00 |
| 53 FILTER DIAPHRAGM MATERIAL | C.Y. | 32 | \$100.00 | \$3,200.00 | \$283.00 | \$9,056.00 | \$120.00 | \$3,840.00 |
| 54 DUST ABATEMENT | L.S. | 1 | \$500,000.00 | \$500,000.00 | \$331,200.00 | \$331,200.00 | \$100,000.00 | \$100,000.00 |
| 55 STORMWATER AND NON-STORMWATER POLLUTION CONTROL | L.S. | 1 | \$17,220.00 | \$17,220.00 | \$70,796.00 | \$70,796.00 | \$100,000.00 | \$100,000.00 |
| 56 COLOR VARNISH | S.F. | 84,000 | \$0.50 | \$42,000.00 | \$0.34 | \$28,560.00 | \$0.30 | \$25,200.00 |
| | | | | \$11,777,770.00 | \$12,120,421.00 | | \$16,175,945.00 | |

SPECIFICATIONS and CONTRACT DOCUMENTS
for the CONSTRUCTION of

**EAGLE CANYON DAM
AND DEBRIS BASIN**

PROJECT NO. 6-0-0190

RIVERSIDE COUNTY, CALIFORNIA



FORM APPROVED COUNTY COUNSEL
BY: *[Signature]* DATE: 11/23/12
NEAL R. KIPNIS

FEB 26 2013 11-2 contract

NOV 06 2012 11.11 p/s

WARREN D. WILLIAMS
General Manager-Chief Engineer



1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
December 20, 2012

ADDENDUM NO. 1
TO
EAGLE CANYON DAM AND DEBRIS BASIN
RIVERSIDE COUNTY, CALIFORNIA

Bid Opening Date: Thursday, January 17, 2013 at 2:00 p.m.

TABLE OF CONTENTS

REVISE Section 14 - Earthwork in its entirety.

REVISE Section 15 - Trench Safety System in its entirety.

REVISE title of Appendix "E" - Hazardous Waste Remediation Plan to read: Appendix "E" - Specifications for Removal of Dumped Fill, Shooting Range Debris and Impacted Soil.

PROPOSAL

REPLACE PROPOSAL in its entirety (Pages VIII, VIIIa, VIIIb, and VIIIc) to accommodate:

- Deletion of Item No. 6 Lead-Impacted Soil Removal;
- Addition of Item No. 6 Removal of Surficial Shooting Range Debris;
- Addition of new Item No. 7 Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil;
- Addition of new Item No. 8 Confirmation Soil Sampling;
- Addition of new Item No. 9 Waste Profiling, Transportation and Disposal (Non-Hazardous);
- Addition of new Item No. 10 Waste Profiling, Transportation and Disposal (RCRA);
- Addition of new Item No. 11 Waste Profiling, Transportation and Disposal (Non-RCRA);
- Renumber Items No. 7 Underground Storage Tank (UST) Removal through No. 21 Trench Safety System;
- Addition of new Item No. 28 Personal Protective Equipment, OSHA Training and Fitness;
- Renumber Items No. 22 Class "A" Concrete, Pipe Cradle through No. 49 Color Varnish; and
- The addition of the signature line on the bottom of Page VIIIc for acknowledgment of addendum.

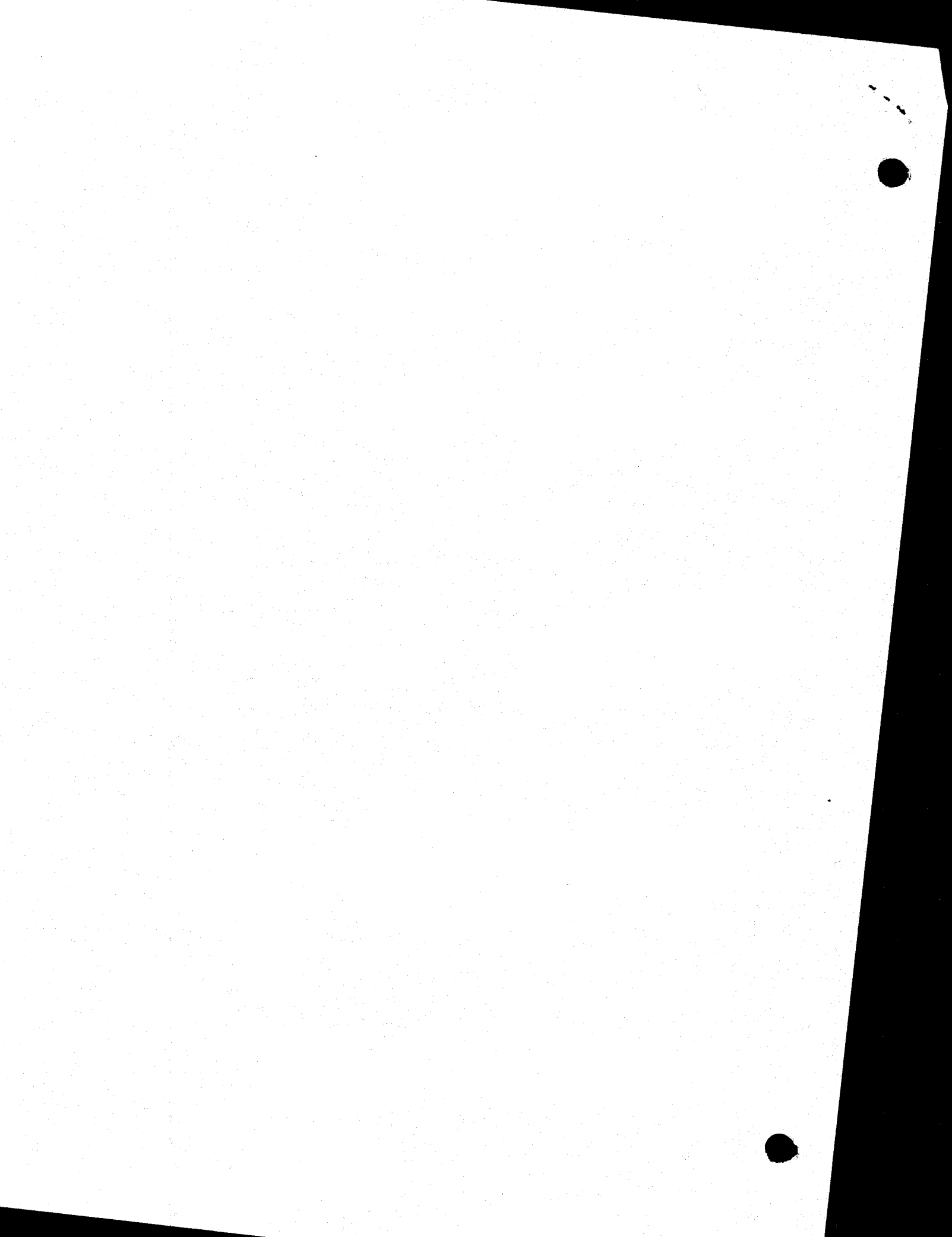


EXHIBIT A

REPLACE Exhibit A, Pages XIX, XIXa, XIXb in its entirety to reflect changes made to the Proposal.

SPECIAL PROVISIONS

REVISE fifth sentence of fifth paragraph of Section 1.1 Drawings and Specifications to read:

The Contractor's attention is directed to Sections 14.2, 14.12, 14.13, 14.14, 14.15, 14.16, 14.17, 14.18, 14.19, 14.20, 14.22, 16.6.18.1, 16.6.23 and 17.2 of the Special Provisions in which DSOD inspection/review is required.

ADD at the end of the last sentence of SECTION 7 - SOILS REPORT the following sentence to read:

A pdf of the soils report, prepared by Genterra Consultants, Inc., dated July 12, 2006 is also available online at the following link:

[http://rcflood.org/Documents/Eagle_Canyon_Dam/Eagle Canyon Dam and Debris basin final Geotechnical Report.pdf](http://rcflood.org/Documents/Eagle_Canyon_Dam/Eagle_Canyon_Dam_and_Debris_basin_final_Geotechnical_Report.pdf).

DETAILED SPECIFICATIONS

REPLACE SECTION 14 - EARTHWORK in its entirety with the attached SECTION 14 - EARTHWORK.

REPLACE SECTION 15 - TRENCH SAFETY SYSTEM in its entirety with the attached SECTION 15 - TRENCH SAFETY SYSTEM AND PERSONAL PROTECTIVE EQUIPMENT.

REPLACE the last words "subject to rejection" with "rejected" of the first paragraph of Section 16.6.12 Delivery to read:

Concrete that has contained its mixing water for more than 90 minutes, or has achieved a temperature of 90°F or higher, or has attained its initial set upon arrival at the jobsite, as determined by the Engineer, will be rejected.

REVISE second sentence of 16.6.17.4.a. Construction Joints to read:

Methods of roughening surfaces and removing laitance may include mechanical abrasion, wet sandblasting (sandblasting is preferred) or high-pressure water jetting of hardened (not green) concrete.

ADD after the last sentence of 16.6.18.1.c. General:

Concrete used to prime pumps shall be wasted.

REPLACE "10 feet" with "5 feet" in the last sentence of 16.6.18.2.b. Transportation to read:

Buckets and conveyors shall be designed for attaching drop chutes or tremies which shall be used to deposit concrete whenever the concrete must be dropped more than 5 feet from the bucket to the placing surface.

ADD after the last sentence of the second paragraph of Section 16.8 Weepholes:

Weepholes shall be constructed with 3 inches of clearance from rebar.

REVISE the first sentence of paragraph three of 17.2 General Pipe Requirement to read:

The District will also require the D-load bearing strength test conforming to ASTM C497.

ADD after the second paragraph of 21.3 Wall Anchors and Slab Anchors:

Engineer will submit the design details of these anchors as well as the specifications for installation and testing of these anchors to the DSOD for review and approval. Engineer will notify the DSOD regarding the schedule for construction of these anchors such that DSOD's representative can inspect the installation and testing of these anchors. Contractor shall notify the Engineer a minimum of 72 hours prior to start of the installation of these anchors.

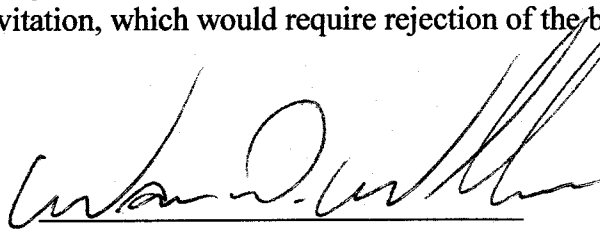
APPENDIX

REPLACE Appendix "E" Hazardous Waste Remediation Plan in its entirety and rename Appendix "E" Specifications for Removal of Dumped Fill, Shooting Range Debris and Impacted Soil.

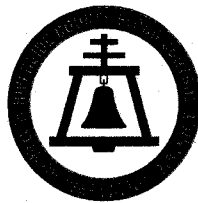
DRAWINGS

REPLACE Drawing No. 6-358, Sheet Nos. 1 through 24 in its entirety.

NOTE: Bidders are required to acknowledge receipt of all addenda at the bottom of **Sheet VIIIc** of the PROPOSAL. Failure to acknowledge all addenda on the bid form may cause the bid to be considered not responsive to the invitation, which would require rejection of the bid.



WARREN D. WILLIAMS
General Manager-Chief Engineer



RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

January 9, 2013

ADDENDUM NO. 2
TO
EAGLE CANYON DAM AND DEBRIS BASIN

RIVERSIDE COUNTY, CALIFORNIA

Bid Opening Date: Thursday, January 17, 2013 at 2:00 p.m.

PROPOSAL

REPLACE PROPOSAL in its entirety (Pages VIII, VIIIa, VIIIb, and VIIIc) to accommodate signature line on the bottom on Page VIIIc for acknowledgment of the addendum.

SPECIAL PROVISIONS

ADD after the last sentence of 1.2 Temporary Construction Easement (TCE) the following:

The palm trees within the TCE shall be protected in place.

DETAILED SPECIFICATIONS

REVISE Section 16.4.2 Waterstops (PVC) to read:

Waterstops between contraction joints in stilling basin walls and training walls, as well as in the bottom slab shall be of minimum 9-inch preformed, dumbbell type waterstops fabricated of polyvinyl chloride (PVC) as specified, 9 inches wide x 3/8 inch thick, Style 751, and 12 inches wide x 3/8 inch thick, Style 755, manufactured by Greenstreak, 3400 Tree Court Industrial Boulevard, St. Louis, MO 63122, or approved equal. PVC Waterstops shall be capable of resisting a minimum water head of 150 feet.

ADD a new paragraph after Section 16.16 Class "B" Concrete, Miscellaneous:

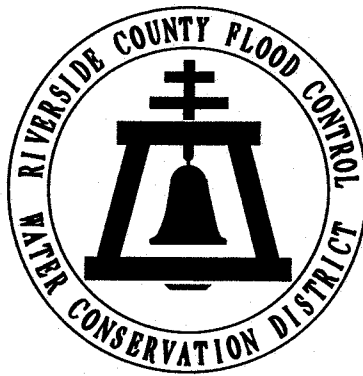
This reach is roughly between Station 4+32 and Station 4+93 along the spillway profile. The spillway slab shall cover the bottom area of the spillway channel between the upstream edge of the concrete sill at the spillway crest, the north edge of the west access road and the toe of the sideslopes of the spillway channel. This spillway slab shall have a thickness of 6 inches and reinforced with two-way #4 rebar placed at 12-inch spacing from center to center in both directions. The rebar shall be placed at about mid-depth of the slab and shall have a minimum of 2 inches of concrete cover. The finished surface of this slab shall achieve the elevation shown for the bottom of the spillway channel in the profile on Drawing No. 6-358, Sheet No. 15.

ADD after the last sentence of Section 21.4 Steel Grates for Intake Structures the following:

Use a stiffener with smaller width but same thickness. Stiffeners may be cut to be flush with the beam flange.

NOTE: Bidders are required to acknowledge receipt of all addenda at the bottom of **Sheet VIIIc** of the **PROPOSAL**. Failure to acknowledge all addenda on the bid form may cause the bid to be considered not responsive to the invitation, which would require rejection of the bid.

WARREN D. WILLIAMS
General Manager-Chief Engineer



SPECIFICATIONS and CONTRACT DOCUMENTS
for the CONSTRUCTION of
EAGLE CANYON DAM
AND DEBRIS BASIN

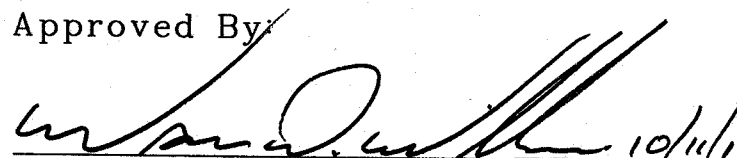
PROJECT NO. 6-0-0190

These specifications and contract documents have been prepared under the direction of the following Registered Civil Engineers:

Recommended By:


Design Engineer 11 October 12
Date



Approved By:

General Manager-Chief Engineer 10/11/12
Date

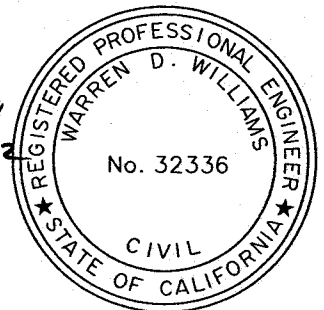


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Drawing No. 6-358

Sheets 1 through 24

NOTICE TO CONTRACTORS

Riverside County Flood Control and Water Conservation District hereinafter called "District", invites sealed proposals for construction of:

Eagle Canyon Dam and Debris Basin

Project No. 6-0-00190

**located in the Palm Springs/Cathedral City area of
Riverside County, California**

Specifications and Contract Documents may be examined at the District's office at 1995 Market Street, Riverside, California, and may be obtained upon payment to District of \$60.00 per set, received at the District's office and \$65.00 per set if mailed. The Specifications and Contract Documents are also offered on CD-ROM for \$10.00 received at the District's office and \$15.00 if mailed. No refund.

Each proposal must be accompanied by a certified or cashier's check or bid bond equal to ten percent (10%) of the amount bid, payable to the Riverside County Flood Control and Water Conservation District as a guarantee that the Contractor will, if awarded the contract, execute a satisfactory contract and furnish the required bonds and proof of insurance.

Proposals must be in accordance with the instructions and filed with District by 2:00 p.m. on Thursday, January 17, 2013 at the District office at the above address which time and place are fixed for the public opening of bids.

The Contractor's attention is directed to Section 6.20 of the Special Provisions. A Mandatory Pre-Bid Site Inspection Tour will be held on Tuesday, December 18, 2012 at 10:00 a.m. at the intersection of Via Allegro and Canyon Plaza Drive, in the city of Cathedral City, CA 92234.

General prevailing rate per diem wages and general prevailing rate of per diem wages for holiday and overtime work, including employer payments for health and welfare, pension, vacation, apprentices

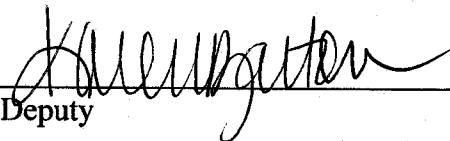
and similar purposes for each craft, classification or type of workman needed for execution of contracts under the jurisdiction of District have been obtained by the Board of Supervisors of the District from the Director of Industrial Relations of the State of California for the area where the work is to be done. The said determinations are on file in the principal office of the District, and will be made available to any interested person upon request.

Contractors submitting proposals for this project shall have an "A" Contractors license from the State of California in order to be considered eligible for the contract award.

Dated: November 6, 2012

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

KECIA HARPER-IHEM
Clerk of the Board

BY 
Deputy

INSTRUCTIONS TO BIDDERS

QUANTITIES: The amount of work to be done or materials to be furnished under the Contract as noted in the proposal, are but estimates and are not to be taken as an expressed or implied statement that the actual amount of work or materials will correspond to the estimate.

The right is reserved to increase or decrease or to entirely eliminate certain items from the work or materials if found desirable or expedient.

The Contractor will be allowed no claims for anticipated profits, loss of profits or for any damages of any sort because of any difference between the estimated and the actual amounts of work done, or materials furnished or used in the completed project.

The Contractor is cautioned against unbalancing of his bid by prorating his overhead into one or two items only when there are a number of items on the schedule. The overhead and indirect charges should be prorated on all items in schedule.

DISCREPANCIES AND OMISSIONS: Discrepancies, omissions, ambiguities, or requirements likely to cause disputes between trades and similar matters shall be promptly brought to the attention of the Engineer. When appropriate, Addenda will be issued by District. No communication by anyone as to such matters except by an Addendum affects the meaning or requirements of the Contract Documents.

WITHDRAWAL OF PROPOSALS: Any proposal may be withdrawn at any time prior to the hour fixed in the Notice to Contractors for the opening of proposals, provided that a request in writing, executed by the bidder or his duly authorized representative, for the withdrawal of such proposal, is filed with the Chief Engineer. The withdrawal of a proposal shall not prejudice the right of a bidder to file a new proposal.

AGREEMENT OF FIGURES: If the unit prices and the total amounts named by the bidder in the proposal do not agree, the unit prices alone will be considered as representing the bidder's intention.

INVALID PROPOSALS: Proposal submitted by telegraph or fax transmission and those which fail to reach the place fixed for opening of proposals prior to the date and hour set for opening same, will not be considered.

INSPECTION OF SITE: Bidders must examine the site and acquaint themselves with all conditions affecting the work.

Information derived from maps, plans or specifications, or from the Chief Engineer or his assistants, will not relieve the successful bidder from properly carrying out all the terms of the written contract.

By the submitting of a proposal, the bidder will be held to have personally examined the site and the drawings, to have carefully read the specifications and to have satisfied himself as to his ability to meet all the difficulties attending the execution of the proposed contract before the delivery of his proposal and agrees that if he is awarded the contract, he will make no claim against the Board of Supervisors based on ignorance or misunderstanding of the contract provisions.

QUALIFICATIONS OF BIDDERS: No proposal will be accepted from a contractor who is not licensed under laws of California, as evidenced by the submittal of the Statement of Licensure. No award will be made to any bidder who cannot give satisfactory assurance to the Board of Supervisors as to his own ability to carry out the contract, both from his financial standing and by reason of his previous experience as a contractor on work of the nature contemplated in the contract. The bidder is required to submit his record of work of similar nature to that proposed under these specifications, and unfamiliarity with the type of work may be sufficient cause for rejection of a proposal.

A bid shall be rejected and a bidder shall be disqualified to bid on a District project if the bidder or any officer, manager, partner or shareholder of the bidder within the eighteen month period prior to the bid date shall have been an officer or employee of the District.

PROPOSAL FORMS: Attention of all bidders is called to the proposal affidavit forms attached hereto and bidders are cautioned that all proposals submitted must be accompanied by the proper affidavit, properly executed. Proposals will be made on forms furnished by District.

REJECTION OF PROPOSALS CONTAINING ALTERATIONS, ERASURES OR IRREGULARITIES: Proposals may be rejected if they show any alterations of form, additions not called for, conditional proposals, incomplete proposals, erasures or irregularities of any kind. Erasures or interlineations in the proposal must be explained or noted over the signature of the bidder.

PUBLIC OPENING OF PROPOSALS: Proposals will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders or their authorized agents are invited to be present.

DISQUALIFICATION OF BIDDERS: More than one proposal from an individual, a firm or partnership, a corporation or an association under the same or different names will not be considered. Reasonable ground for believing that any bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such bidder is interested. If there is any reason for believing that collusion exists among the bidders, none of the participants in such collusion will be considered in awarding the contract. Proposals in which the prices obviously are unbalanced may be rejected.

ADDENDA: District reserves the right to issue Addenda to the Contract Documents at any time prior to the time set to open bids. Each potential bidder shall leave with the District its name and address for the purpose of receiving Addenda. District will cause copies of Addenda to be mailed or delivered to such names at such addresses. To be considered, a Contractor's proposal must list and take into account all issued Addenda.

AWARD OF CONTRACT: The right is reserved to reject any and all proposals and to waive technical defects as the best interests of the District may require.

The award of the Contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with the requirements prescribed. The award, if made, will be made within sixty (60) days after the opening of the proposals.

All proposals will be compared on the basis of the Engineer's estimate of the quantities of work to be done.

RETURN OF PROPOSAL GUARANTEES: Within ten (10) days after the award of the contract, the Clerk will return the proposal guarantees accompanying such of the proposals as are not considered in making the award. All other proposal guarantees will be held until the contract has been fully executed, after which they will be returned to the respective bidders whose proposal they accompany.

CONTRACT BONDS: The Contractor shall furnish two (2) surety bonds in duplicate, one as a security for the faithful performance of the contract in the amount equal to one hundred percent (100%) of the contract price, and one as security for the payment of all persons performing labor and furnishing materials in connection with the contract in an amount equal to one hundred percent (100%) of the contract price. All bonds must be submitted on forms provided by the District. Bonds submitted in any other form will not be accepted.

SUBLETTING AND SUBCONTRACTING: Bidders are required, pursuant to the Subletting and Subcontracting Fair Practices Act (commencing with Section 4100 of the Public Contract Code) to list in their proposal the name and location of place of business of each subcontractor who will perform work or labor or render services in or about the construction of the work or improvement or a subcontractor who specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Plans and Specifications, in excess of one-half (½) of one percent (1%) of the prime Contractor's total bid. Failure to list a subcontractor for a portion of the work means that the prime contractor will do that portion of the work.

IRAN CONTRACTING ACT: In accordance with Public Contract Code Section 2204(a), prior to bidding on, submitting a proposal or executing a contract or renewal for a District contract for goods or services of \$1,000,000 or more, a Contractor must either:

- a) Certify it is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code Section 2203(b) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or
- b) Demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code Section 2203(c) or (d).

To comply with this requirement, please insert your Contractor or financial institution name and Federal ID Number (if available) and complete one of the options on Page XV. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Public Contract Code section 2205.)

CONTRACTOR'S PROPOSAL

TO THE BOARD OF SUPERVISORS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT:

The undersigned hereby declare:

(a) That the only persons or parties interested in this proposal as principals are the following:

Name of Company (and dba if applicable): Hal Hays Construction, Inc.

Hal Hays, President/CEO

Lisa Frainee, Secretary

(If the Contractor is a corporation, give the name of the corporation and the name of its president, secretary, treasurer, and manager. If a copartnership, give the name under which the copartnership does business, and the names and addresses of all copartners. If an individual, state the name and address under which the contract is to be drawn.)

(b) That this proposal is made without collusion with any other person, firm or corporation.

(c) That he has carefully examined the location of the proposed work, and has familiarized himself with all of the physical and climatic conditions, and makes his proposal solely upon his own knowledge.

(d) That he has carefully examined the attached specifications as referred to, and the plans, and makes this proposal in accordance therewith.

(e) That, if this proposal is accepted, he will enter into a written contract with the Riverside County Flood Control and Water Conservation District, Riverside, State of California.

(f) That he proposes to enter into such contract and to accept in full payment for the work actually done thereunder the prices shown in the attached schedule. It is understood and agreed that the quantities set forth are but estimates, and that the unit prices will apply to the actual quantities whatever they may be.

Accompanying this proposal is a certified or cashier's check or bid bond payable to the order of the Riverside County Flood Control and Water Conservation District, Riverside, California, in the sum of 10% of Amount Bid Dollars (\$ 10% of Amount Bid)

It is understood and agreed that should the Contractor within ten (10) days after the prescribed forms are presented to him for signature fail to return the contract and furnish acceptable surety bond and insurance, then, at the discretion of the District, the proceeds of said check shall become the property of the District, the Contractor shall be found in default and the project may be awarded to another contractor. The bid bond or check shall be held subject to payment to the District of the difference in money between the amount of the contract with another party to perform the work, together with the cost to the District of redrafting, redrawing and publishing documents and papers necessary to obtain new bids on said work. The bid bond or check shall, in addition, be held subject to all other actual damages suffered by the District. But if the contract is entered into and said bonds and insurance are furnished, or if the proposal is not accepted, then the said check shall be returned to the undersigned.

RECEIVED
JAN 17 2013
1:53 p.m.
RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

PROPOSAL

For the Construction of Eagle Canyon Dam and Debris Basin, located in the Palm Springs/Cathedral City area of Riverside County, consisting of the following estimated quantities:

| SECT. NO. | ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|-----------|----------|--|------|----------|-----------|--------------|
| 10 | 1. | Mobilization | L.S. | --- | --- | 883,990.00 |
| 11 | 2. | Water Control | L.S. | --- | --- | 10,500.00 |
| 13 | 3. | Clearing and Miscellaneous Work | L.S. | --- | --- | 160,500.00 |
| 13 | 4. | Extra Directed Work | L.S. | --- | --- | 200,000.00 |
| 14 | 5. | Dumped Fill Removal | C.Y. | 65,000 | 15.50 | 1,007,500.00 |
| 14 | 6. | Removal of Surficial Shooting Range Debris | C.Y. | 75 | 142.00 | 10,650.00 |
| 14 | 7. | Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil | C.Y. | 2,925 | 22.00 | 64,350.00 |
| 14 | 8. | Confirmation Soil Sampling | EACH | 25 | 277.00 | 6,925.00 |
| 14 | 9. | Waste Profiling, Transportation and Disposal (Non-Hazardous) | TONS | 11,250 | 44.00 | 495,000.00 |
| 14 | 10. | Waste Profiling, Transportation and Disposal (RCRA) | TONS | 1,500 | 200.00 | 300,000.00 |
| 14 | 11. | Waste Profiling, Transportation and Disposal (Non-RCRA) | TONS | 1,500 | 75.00 | 112,500.00 |
| 14 | 12. | Final Closure Report | L.S. | --- | --- | 11,500.00 |
| 14 | 13. | Underground Storage Tank (UST) Removal | L.S. | --- | --- | 4,100.00 |
| 14 | 14. | Basin Excavation | C.Y. | 31,030 | 5.00 | 155,150.00 |
| 14 | 15. | Basin Excavation (Rock) | C.Y. | 4,000 | 16.35 | 65,400.00 |

PROPOSAL contd.

| SECT. NO. | ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|-----------|----------|---|------|----------|-----------|-----------------------------------|
| 14 | 16. | Abutment Excavation and Shaping (Rock) | C.Y. | 52,500 | 10.00 | 525,000.00 |
| 14 | 17. | Dam Foundation Excavation | C.Y. | 90,000 | 2.00 | 180,000.00 |
| 14 | 18. | Spillway Excavation | C.Y. | 41,140 | 10.00 | 411,400.00 |
| 14 | 19. | Stilling Basin Excavation | C.Y. | 6,770 | 2.40 | 16,248.00 |
| 14 | 20. | Access Road Excavation (Rock) | C.Y. | 7,310 | 13.75 | 100,512.50 |
| 14 | 21. | Outlet Pipe Trench Excavation | C.Y. | 2,320 | 9.50 | 22,040.00 |
| 14 | 22. | Outlet Channel Excavation | C.Y. | 6,380 | 3.30 | 21,054.00 |
| 14 | 23. | Dam Embankment Core | C.Y. | 32,300 | 12.00 | 387,600.00 |
| 14 | 24. | Dam Embankment (Upstream and Downstream Shells) | C.Y. | 156,000 | 11.00 | 1,716,000.00 |
| 14 | 25. | Backfill for Stilling Basin | C.Y. | 7,980 | 3.00 | 23,940.00 |
| 14 | 26. | Fill for Access Roads | C.Y. | 22,780 | 2.20 | 50,116.00 |
| 15 | 27. | Trench Safety System | L.S. | --- | --- | 1,150.00 |
| 15 | 28. | Personal Protective Equipment, OSHA Training and Fitness Test | L.S. | --- | --- | 11,500.00 |
| 16 | 29. | Class "A" Concrete, Pipe Cradle | C.Y. | 178 | 360.00 | 64,080.00 |
| 16 | 30. | Class "A" Concrete, Intake Structure | C.Y. | 38 | 790.00 | 30,020.00 |
| 16 | 31. | Class "A" Concrete, Stilling Basin Structure | C.Y. | 921 | 580.00 | 534,180.00 |
| 16 | 32. | Class "A" Concrete, Outlet Headwall | C.Y. | 37 | 802.00 | 26,674.00 29,674.00 |

HAH

PROPOSAL contd.

| SECT. NO. | ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|--------------|-------------|---|------|----------|--------------|---------------|
| 16 | 33. | Class "B" Concrete, Cutoff Wall | C.Y. | 26 | 655.00 | 17,030.00 |
| 16 | 34. | Class "B" Concrete, Sill at Spillway Crest | C.Y. | 6 | 435.00 | 2,610.00 |
| 16 | 35. | Class "B" Concrete, V-Ditch | C.Y. | 37 | 645.00 | 23,865.00 |
| 16 | 36. | Class "B" Concrete, Miscellaneous | C.Y. | 78 | 1,945.00 | 151,710.00 |
| 16 | 37. | Slush Grout, Dental and Backfill Concrete | C.Y. | 1,000 | 287.00 | 287,000.00 |
| 17 | 38. | 42-Inch Reinforced Concrete Pressure Pipe (RCPP), 4000D | L.F. | 310 | 139.00 | 43,090.00 |
| 20 | 39. | 6-Foot Chain Link Fence | L.F. | 1,630 | 26.00 | 42,380.00 |
| 20 | 40. | 14-Foot Double Drive Gates | EACH | 1 | 2220.00 | 2,220.00 |
| 21 | 41. | Steel Grates for Intake Structure | L.S. | --- | --- | 23,750.00 |
| 21 | 42. | 24-Inch Side Inlet Drain Pipe | L.S. | --- | --- | 9,200.00 |
| 21 | 43. | Weep Holes on Spillway Channel | L.F. | 80 | 4.00 | 320.00 |
| 21 | 44. | Leach Field Drains | L.S. | --- | --- | 73,500.00 |
| 26 | 45. | Rock Slope Protection, 1-Ton Class | TONS | 1,800 | 45.00 | 81,000.00 |
| 26 | 46. | Rock Slope Protection, 1/2-Ton Class | TONS | 630 | 46.25 | 29,137.50 |
| 26 | 47. | Rock Slope Protection, 1/4-Ton Class | TONS | 21,000 | 40.00 | 840,000.00 |
| 26 | 48. | Rock Slope Protection, Light Class | TONS | 15 | 80.00 | 1,200.00 |
| 26 | 49. | Crushed Rock | C.Y. | 620 | 59.00 | 36,580.00 |

PROPOSAL contd.

| SECT. NO. | ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|-----------|----------|--|------|----------|-----------|------------|
| 26 | 50. | Filter Blanket, No. 2 Backing Class | C.Y. | 4,935 | 74.00 | 365,190.00 |
| 26 | 51. | Rock Slope Protection Fabric | S.Y. | 20,550 | 2.10 | 43,155.00 |
| 26 | 52. | Concrete Grout for Grouted Rock Riprap and Grouted No. 2 Backing Class | C.Y. | 320 | 112.00 | 35,840.00 |
| 26 | 53. | Filter Diaphragm Material | C.Y. | 32 | 135.00 | 4,320.00 |
| 27 | 54. | Dust Abatement | L.S. | --- | --- | 28,600.00 |
| 29 | 55. | Stormwater and Non-Stormwater Pollution Control | L.S. | --- | --- | 75,000.00 |
| 33 | 56. | Color Varnish | S.F. | 84,000 | 0.25 | 21,000.00 |

TOTAL ~~9,989,999.00~~

9,849,777.00
HAY

Hal Hays Construction, Inc.
Name of Company

Hal Hays
Signature of Contractor

4181 Latham Street
Address

54-2084366
S.S.N. or E.I.N.

Riverside, CA 92501
City, State, Zip

License No. 667560; Class A, B, C-12, & C-21
Contractor's License No. and Classification

951-788-0703 951-788-1517
Telephone Number Fax Number

ADDENDUM NO. 1 ACKNOWLEDGED _____

Hal Hays

ADDENDUM NO. 2 ACKNOWLEDGED _____

Hal Hays

LIST OF SUBCONTRACTORS

Contractor Hal Hays Construction, Inc.

Eagle Canyon Dam and Debris Basin
Project No. 6-0-00190

Give the name and the location of the place of business of each Subcontractor who will perform work or labor or render service to the General Contractor in or about the construction of the work or improvement, or a Subcontractor who specially fabricates and installs a portion of the work or improvement, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total bid. List the bid item numbers of the work each subcontractor will do. If a portion of an item is to be subcontracted, show what percentage of that item is to be subcontracted.

Item No. (s) Portion 56

Name of Subcontractor Soil Tech

Address/City/Phone 6420 S. Cameron Dr STE 207 Las Vegas

License No. 933394 702-873-2023

Item No. (s) Portion 15, 16, 18, 20

Name of Subcontractor EDICK & WATT INC

Address/City/Phone PO BOX 13428 EL CAJON CA 619-442-8883

License No. 622534

Item No. (s) Portion of 39, 40

Name of Subcontractor WESTBROOK FENCE

Address/City/Phone PO Box 90310, S B 909-887-2638

License No. 615318

Item No. (s) ~~11~~ Dan Copp Crushing, Portion of 23, 24

Name of Subcontractor Dan Copp Crushing

Address/City/Phone 22895-C Savi Ranch Pky Yoeba Linda CA 714-777-6400

License No. 361248

Item No. (s) Portion of 5 thru 12

Name of Subcontractor Brickley Environmental

Address/City/Phone 957 West Race St, S B 909-888-2010

License No. 610414

LIST OF SUBCONTRACTORS

Contractor Hal Hays Construction, Inc.

Eagle Canyon Dam and Debris Basin
Project No. 6-0-00190

Give the name and the location of the place of business of each Subcontractor who will perform work or labor or render service to the General Contractor in or about the construction of the work or improvement, or a Subcontractor who specially fabricates and installs a portion of the work or improvement, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total bid. List the bid item numbers of the work each subcontractor will do. If a portion of an item is to be subcontracted, show what percentage of that item is to be subcontracted.

Item No. (s) portion of 29 thru 36 & 42
Name of Subcontractor Amber Steel
Address/City/Phone 312 Willow Ave Rialto CA 91054
License No. 268566 909-874-2213

Item No. (s) _____
Name of Subcontractor _____
Address/City/Phone _____
License No. _____

Item No. (s) _____
Name of Subcontractor _____
Address/City/Phone _____
License No. _____

Item No. (s) _____
Name of Subcontractor _____
Address/City/Phone _____
License No. _____

Item No. (s) _____
Name of Subcontractor _____
Address/City/Phone _____
License No. _____

EXPERIENCE STATEMENT

Bidder submits, as part of his bid, the following statements as to his experience qualifications. Bidder certifies that all statements and information set forth below are true and accurate. Bidder hereby authorizes the District to make inquiry as appropriate regarding his experience.

Bidder has been engaged in the contracting business under this present business name for 10 years.

Bidder's experience in work of a nature similar in type and magnitude to that set forth in the Specification extends over a period of 32 years.

Within the last three years, Bidder has satisfactorily completed the following contracts covering work similar in type and magnitude to that set forth in these Specifications for the following owners (name person, firms, or authorities):

| Name and Address of Owner/Agency | Representative and Telephone | Type of Work, Year Completed and Dollar Amount |
|--|--|---|
| 1. US Army Corps of Engineers 3636 N. Central Ave, Ste 500 Phoenix, AZ 85012 | James Moye, Project Engineer Phone: (602) 230-6872 | Erosion stabilization of ditches and roadways, using earth fill embankments and drainage correction. Completed 11/04/2011; Dollar Amount \$3,262,357 |
| 2. Central Fed Lands Hwy Div 12300 Dakota Avenue Lakewood, CO 80228 | Micah Leadford, Project Manager Phone: (720) 963-3498 | Yosemite Creek erosion control, using earth filled dams, grouted riprap at the toe bank and loose riprap below the toe bank. Completed 11/28/2009; Dollar Amount \$669,900 |
| 3. US Army Corps of Engineers 3636 N. Central Ave, Ste 500 Phoenix, AZ 85012 | James Moye, Project Engineer Phone: (602) 230-6872 | Erosion stabilization of ditches and roadways, using earth fill embankments, drainage correction, and culverts. Completed 07/13/2012; Dollar Amount \$3,589,637 |
| 4. US Army Corps of Engineers P.O. Box 17300 Forth Worth, TX 76102 | Jorge Meneses, Res. Engineer Phone: (915)838-4795 | US Highway 54 overpass & connectors, including erosion control drainage canals, earth fill embankments, and culverts Completed 08/22/2012; Dollar Amount \$7,771,429 |

Founded in 1991, Hal Hays Construction, Inc. (HHCI) is an award-winning general contractor with in-house crews (heavy civil, concrete, paving, site construction, demolition, utilities, carpentry/interiors, and electrical). HHCI specialties include Earthwork, Roads, Concrete, Paving, and Airfield Paving, including dams and earth fill embankments. Since its inception, the firm has successfully delivered over 1,000 multi-disciplinary projects valued at over \$463M to commercial, government and public agencies including US Army Corps of Engineers, NAVFAC, Department of Homeland Security, National Park Service, Bureau of Indian Affairs, San Bernardino County Flood Control Agency, and numerous city and county agencies. Also, HHCI is a certified Native American-Owned firm, and can provide details of certification if this assists with County diversity supplier goals.

STATEMENT OF LICENSURE

Pursuant to California Public Contract Code §3300, the undersigned does certify as follows:

1. That the pocket license/certificate of licensure I have presented to owner as of this date is my own license, being State of California, Contractors License No. 667560; and
2. That said Contractors License is current and valid; and
3. That said Contractors License is of a classification appropriate to the work to be undertaken for owner, a Class A license.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

DATED: 1/17/13



Signature

President/CEO
Title

STATE OF CALIFORNIA) §
COUNTY OF RIVERSIDE)

On this the January day of 17, 20 13, before me

Hal Hays

the undersigned Notary Public, personally appeared

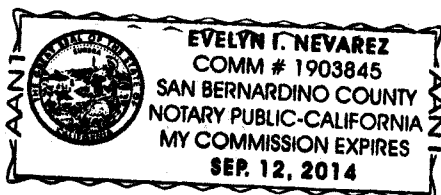
personally known to me

proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument, and acknowledged that he/~~she~~ executed it.

WITNESS my hand and official seal.



Notary's Signature



AFFIDAVIT FOR INDIVIDUAL CONTRACTORS

STATE OF CALIFORNIA) §
COUNTY OF RIVERSIDE)

_____, being first duly sworn, deposes and says:

That he or she is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Flood Control and Water Conservation District or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

His or Her signature

Subscribed and sworn to before me

this _____ day of _____, 20_____.

Signature and stamp of Notary
administering oath

AFFIDAVIT FOR JOINT VENTURE OR COPARTNERSHIP CONTRACTOR

STATE OF CALIFORNIA) §
COUNTY OF RIVERSIDE)

_____, being first duly sworn, deposes and says:

That he or she is a member of the joint venture or copartnership firm designated as

which is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Flood Control and Water Conservation District or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

That he has been and is duly vested with authority to make and sign instruments for the joint venture or copartnership by

who constitute the other members of the joint venture or copartnership.

His or Her signature

Subscribed and sworn to before me

this _____ day of _____, 20____

Signature and stamp of Notary
administering oath

AFFIDAVIT FOR CORPORATE CONTRACTOR

STATE OF CALIFORNIA) §
COUNTY OF RIVERSIDE)

Hal Hays, being first duly sworn, deposes and says:

That he or ~~she~~ is President/CEO

of Hal Hays Construction, Inc.

a corporation which is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Flood Control and Water Conservation District or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

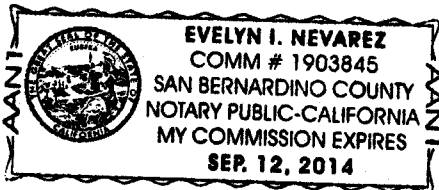
Hal Hays

His or Her signature

Subscribed and sworn to before me this January day of 17, 20 13.

[Signature]

Signature and stamp of Notary administering oath



IRAN CONTRACTING ACT

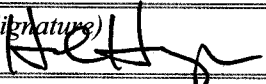
In accordance with Public Contract Code Section 2204(a), prior to bidding on, submitting a proposal or executing a contract or renewal for a District contract for goods or services of \$1,000,000 or more, a Contractor must either:

- c) Certify it is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code Section 2203(b) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or
- d) Demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code Section 2203(c) or (d).

To comply with this requirement, please insert your Contractor or financial institution name and Federal ID Number (if available) and complete one of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Public Contract Code Section 2205.)

Option #1 – Certification

I, the official named below, certify I am duly authorized to execute this certification on behalf of the Contractor/financial institution identified below, and the Contractor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

| | | |
|---|-------------------------------------|---|
| <i>Contractor Name/Financial Institution (Printed)</i> Hal Hays Construction, Inc. | | <i>Federal ID Number (or n/a)</i> 54-2084366 |
| <i>By (Authorized Signature)</i>  | | |
| <i>Printed Name and Title of Person Signing</i> Hal Hays, President/CEO | | |
| <i>Date Executed</i> 01/17/13 | <i>Executed in</i> Riverside, CA | |

Option #2 – Exemption

Pursuant to Public Contract Code Sections 2203(c) and (d), a public entity may permit a Contractor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services.

If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

| | | |
|--|--------------------|-----------------------------------|
| <i>Contractor Name/Financial Institution (Printed)</i> | | <i>Federal ID Number (or n/a)</i> |
| <i>By (Authorized Signature)</i> | | |
| <i>Printed Name and Title of Person Signing</i> | | |
| <i>Date Executed</i> | <i>Executed in</i> | |

BID BOND

Recitals:

1. Hal Hays Construction, Inc. (Contractor), has submitted its Contractor's Proposal to the Riverside County Flood Control and Water Conservation District, (District), for the construction of public work for **Eagle Canyon Dam and Debris Basin** in accordance with a Notice to Contractors dated November 6, 2012.

2. Western Surety Company a South Dakota corporation, hereafter called (Surety), is the surety on this Bond.

Agreement: We, Contractor as principal and Surety as surety, jointly and severally agree and state as follows:

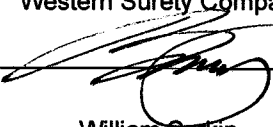
1. The amount of the obligation of this Bond is 10% of the amount of the Contractor's Proposal and inures to the benefit of District.

2. This Bond is exonerated by (1) District rejecting said Proposal or, in the alternate, (2) if said Proposal is accepted, Contractor executes the Agreement and furnishes the Bonds and Insurance as agreed to in its Proposal, otherwise it remains in full force and effect for the recovery of loss, damage and expense of District resulting from failure of Contractor to act as agreed to in its Proposal. Some types of possible loss, damage and expense are specified in the Contractor's Proposal.

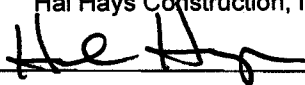
3. Surety for value received, stipulates and agrees that its obligations hereunder shall in no way be impaired or affected by any extension of time within which District may accept the Proposal and waives notice of any such extension.

4. This Bond is binding on our heirs, executors, administrators, successors and assigns.

Dated: December 7, 2012

Western Surety Company
By 
William Syrkin,
(Printed Name)

Title Attorney-in-Fact
(Surety)

Hal Hays Construction, Inc.
By 
Hal Hays
(Printed Name)

Title President
(Contractor)

NOTARY ACKNOWLEDGEMENT REQUIRED FOR EACH SIGNATURE PLEASE ATTACH SEPARATE FORM

NOTARY ACKNOWLEDGEMENT REQUIRED FOR EACH SIGNATURE PLEASE ATTACH SEPARATE FORM

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Owen Brown, Richard Adair, William Syrkin, Sergio D Bechara, Margaret Gilmore, Rebecca Haas-Bates, Individually

of Irvine, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 24th day of October, 2012.



WESTERN SURETY COMPANY

Paul T. Brufat

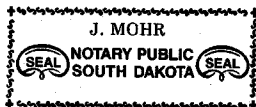
Paul T. Brufat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 24th day of October, 2012, before me personally came Paul T. Brufat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

June 23, 2015



J. Mohr

J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 7th day of December, 2012.



WESTERN SURETY COMPANY

L. Nelson

L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California }
County of Orange

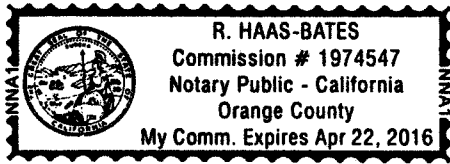
On 12/07/2012 before me, R. Haas-Bates, Notary Public
Date Here Insert Name and Title of the Officer

personally appeared William Syrkin
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature R. Haas-Bates
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

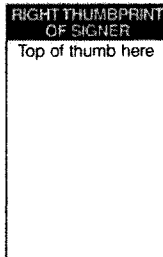
Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Bid Bond
Document Date: 12/07/2012 Number of Pages: One (1)
Signer(s) Other Than Named Above: _____

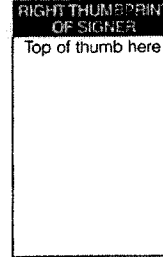
Capacity(ies) Claimed by Signer(s)

Signer's Name: William Syrkin
 Individual
 Corporate Officer — Title(s): _____
 Partner — Limited General
 Attorney in Fact
 Trustee
 Guardian or Conservator
 Other: _____



Signer Is Representing: Western Surety Company

Signer's Name: _____
 Individual
 Corporate Officer — Title(s): _____
 Partner — Limited General
 Attorney in Fact
 Trustee
 Guardian or Conservator
 Other: _____



Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of Riverside

On December 7, 2012 before me, R. C. Santos, Notary Public
(Here insert name and title of the officer)

personally appeared Hal Hays

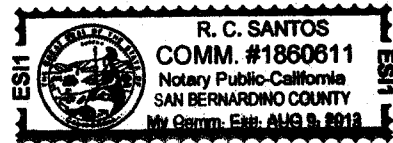
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

RCS
 Signature of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

| |
|---|
| <p>DESCRIPTION OF THE ATTACHED DOCUMENT</p> <p style="text-align: center;"><u>Bid Bond</u></p> <p style="text-align: center;"><small>(Title or description of attached document)</small></p> <hr/> <p style="text-align: center;"><small>(Title or description of attached document continued)</small></p> <p>Number of Pages <u>1</u> Document Date <u>12/7/2012</u></p> <p style="text-align: center;"><small>(Additional information)</small></p> |
|---|

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

| |
|---|
| <p>CAPACITY CLAIMED BY THE SIGNER</p> <p><input type="checkbox"/> Individual (s)</p> <p><input checked="" type="checkbox"/> Corporate Officer <u>President</u> <small>(Title)</small></p> <p><input type="checkbox"/> Partner(s)</p> <p><input type="checkbox"/> Attorney-in-Fact</p> <p><input type="checkbox"/> Trustee(s)</p> <p><input type="checkbox"/> Other _____</p> |
|---|

AGREEMENT

THIS AGREEMENT is made as of February 26, 2013 and is between RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT (District) and HAL HAYS CONSTRUCTION, INC. (Contractor).

IT IS AGREED BY THE PARTIES AS FOLLOWS:

1. The Work. Contractor shall furnish all tools, equipment, apparatus, facilities, labor and material necessary to perform the work for **Project No. 6-0-00190, Eagle Canyon Dam and Debris Basin** of District, in exact conformity with the Contract Documents (identified below) for the Project, subject to such inspection as District deems appropriate and pursuant to orders and instructions, drawings, etc., issued by District in accordance with the Contract Documents.

2. Contract Documents. The Contract Documents for **Project No. 6-0-00190, Eagle Canyon Dam and Debris Basin** of District are: (a) Notice to Contractors; (b) Instructions To Bidders; (c) Contractor's Proposal; (d) Agreement; (e) General Provisions; (f) Special Provisions; (g) Detailed Specifications; (h) Plans; (i) Bid Bond; (j) Performance Bond; (k) Payment Bond; (l) Appendices and any other documents included in or incorporated into the contract documents; (m) Orders, Instructions, Drawings and Plans issued by District during the course of the work in accordance with the provisions of the Contract Documents.

Each of the above-mentioned documents presently in existence are by this reference incorporated herein and each of said documents not now in existence are incorporated herein as of the time of their issuance.

The Bid Bond is exonerated upon execution and delivery to District in a form satisfactory to District, of the following, duly executed by Contractor and also by its Surety as to the Bonds, Agreement, Certificate of Insurance, Payment Bond, and Performance Bond.

3. Bonds - Insurance. Prior to commencement of the work, Contractor must deliver to District and District must approve, a fully executed Performance Bond in the amount of 100% of the estimated contract price, a fully executed Payment Bond in the amount of 100% of the estimated contract price, and fully executed certificates of insurance evidencing the existence of the insurance required by Subsection 8.02 of the General Provisions. The Payment Bond and Performance Bond must be on forms furnished by District.

Should any surety on the Payment Bond or Performance Bond be deemed unsatisfactory by the Board of Supervisors of District, Contractor shall upon notice promptly substitute new Bonds in form satisfactory to District.

4. Contract Price - Payment. Attached hereto, marked Exhibit A and by this reference made a part hereof, is provision for the Contract Price and its payment.

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

By Marion Ashley
Chairman of its Board of Supervisors
MARION ASHLEY

ATTEST:

KECIA HARPER-IHEM
Clerk of the Board

By Kellington
Deputy

FORM APPROVED COUNTY COUNSEL
BY: Neal R. Kipnis
NEAL R. KIPNIS DATE 2/16/13

(Seal)

Hal Hays Construction, Inc.
Contractor

By He Hays

Title President & CEO

(If corporation affix corporate seal)

EXHIBIT A

(To Agreement for Riverside County Flood Control and Water Conservation District's **Project No. 6-0-00190, Eagle Canyon Dam and Debris Basin**, located in the Palm Springs/Cathedral City area of Riverside County, California.)

Contract Price - Payment - District shall pay Contractor the following sums for the items set forth below in accordance with Contractor's Proposal as accepted by District, which sums shall be paid as provided in the General Provisions and subject to additions and deductions as provided in the Contract Documents.

It is understood that the quantities listed, except for those shown as "Final" or "Lump Sum" are but estimates only and final payment will be based on actual work performed, subject to such adjustments and alterations as elsewhere provided.

| ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|----------|--|------|----------|-----------|--------------|
| 1. | Mobilization | L.S. | --- | --- | \$883,990.00 |
| 2. | Water Control | L.S. | --- | --- | 10,500.00 |
| 3. | Clearing and Miscellaneous Work | L.S. | --- | --- | 160,000.00 |
| 4. | Extra Directed Work | L.S. | --- | --- | 200,000.00 |
| 5. | Dumped Fill Removal | C.Y. | 65,000 | \$15.50 | 1,007,500.00 |
| 6. | Removal of Surficial Shooting Range Debris | C.Y. | 75 | \$142.00 | 10,650.00 |
| 7. | Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil | C.Y. | 2,925 | \$22.00 | 64,350.00 |
| 8. | Confirmation Soil Sampling | EACH | 25 | \$277.00 | 6,925.00 |
| 9. | Waste Profiling, Transportation and Disposal (Non-Hazardous) | TONS | 11,250 | \$44.00 | 495,000.00 |
| 10. | Waste Profiling, Transportation and Disposal (RCRA) | TONS | 1,500 | \$200.00 | 300,000.00 |
| 11. | Waste Profiling, Transportation and Disposal (Non-RCRA) | TONS | 1,500 | \$75.00 | 112,500.00 |
| 12. | Final Closure Report | L.S. | --- | --- | 11,500.00 |
| 13. | Underground Storage Tank (UST) Removal | L.S. | --- | --- | 4,100.00 |

EXHIBIT contd.

| ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|----------|---|------|----------|-----------|--------------|
| 14. | Basin Excavation | C.Y. | 31,030 | \$5.00 | 155,150.00 |
| 15. | Basin Excavation (Rock) | C.Y. | 4,000 | \$16.35 | 65,400.00 |
| 16. | Abutment Excavation and Shaping (Rock) | C.Y. | 52,500 | \$10.00 | 525,000.00 |
| 17. | Dam Foundation Excavation | C.Y. | 90,000 | \$2.00 | 180,000.00 |
| 18. | Spillway Excavation | C.Y. | 41,140 | \$10.00 | 411,400.00 |
| 19. | Stilling Basin Excavation | C.Y. | 6,770 | \$2.40 | 16,248.00 |
| 20. | Access Road Excavation (Rock) | C.Y. | 7,310 | \$13.75 | 100,512.50 |
| 21. | Outlet Pipe Trench Excavation | C.Y. | 2,320 | \$9.50 | 22,040.00 |
| 22. | Outlet Channel Excavation | C.Y. | 6,380 | \$3.30 | 21,054.00 |
| 23. | Dam Embankment Core | C.Y. | 32,300 | \$12.00 | 387,600.00 |
| 24. | Dam Embankment (Upstream and Downstream Shells) | C.Y. | 156,000 | \$11.00 | 1,716,000.00 |
| 25. | Backfill for Stilling Basin | C.Y. | 7,980 | \$3.00 | 23,940.00 |
| 26. | Fill for Access Roads | C.Y. | 22,780 | \$2.20 | 50,116.00 |
| 27. | Trench Safety System | L.S. | --- | --- | 1,150.00 |
| 28. | Personal Protective Equipment, OSHA Training and Fitness Test | L.S. | --- | --- | 11,500.00 |
| 29. | Class "A" Concrete, Pipe Cradle | C.Y. | 178 | \$360.00 | 64,080.00 |
| 30. | Class "A" Concrete, Intake Structure | C.Y. | 38 | \$790.00 | 30,020.00 |
| 31. | Class "A" Concrete, Stilling Basin Structure | C.Y. | 921 | \$580.00 | 534,180.00 |
| 32. | Class "A" Concrete, Outlet Headwall | C.Y. | 37 | \$802.00 | 29,674.00 |
| 33. | Class "B" Concrete, Cutoff Wall | C.Y. | 26 | \$655.00 | 17,030.00 |

EXHIBIT contd.

| ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|----------|--|------|----------|------------|------------|
| 34. | Class "B" Concrete, Sill at Spillway Crest | C.Y. | 6 | \$435.00 | 2,610.00 |
| 35. | Class "B" Concrete, V-Ditch | C.Y. | 37 | \$645.00 | 23,865.00 |
| 36. | Class "B" Concrete, Miscellaneous | C.Y. | 78 | \$1,945.00 | 151,710.00 |
| 37. | Slush Grout, Dental and Backfill Concrete | C.Y. | 1,000 | \$287.00 | 287,000.00 |
| 38. | 42-Inch Reinforced Concrete Pressure Pipe (RCPP), 4000D | L.F. | 310 | \$139.00 | 43,090.00 |
| 39. | 6-Foot Chain Link Fence | L.F. | 1,630 | \$26.00 | 42,380.00 |
| 40. | 14-Foot Double Drive Gates | EACH | 1 | \$2,220.00 | 2,220.00 |
| 41. | Steel Grates for Intake Structure | L.S. | --- | --- | 23,750.00 |
| 42. | 24-Inch Side Inlet Drain Pipe | L.S. | --- | --- | 9,200.00 |
| 43. | Weep Holes on Spillway Channel | L.F. | 80 | \$4.00 | 320.00 |
| 44. | Leach Field Drains | L.S. | --- | --- | 73,500.00 |
| 45. | Rock Slope Protection, 1-Ton Class | TONS | 1,800 | \$45.00 | 81,000.00 |
| 46. | Rock Slope Protection, 1/2-Ton Class | TONS | 630 | \$46.25 | 29,137.50 |
| 47. | Rock Slope Protection, 1/4-Ton Class | TONS | 21,000 | \$40.00 | 840,000.00 |
| 48. | Rock Slope Protection, Light Class | TONS | 15 | \$80.00 | 1,200.00 |
| 49. | Crushed Rock | C.Y. | 620 | \$59.00 | 36,580.00 |
| 50. | Filter Blanket, No. 2 Backing Class | C.Y. | 4,935 | \$74.00 | 365,190.00 |
| 51. | Rock Slope Protection Fabric | S.Y. | 20,550 | \$2.10 | 43,155.00 |
| 52. | Concrete Grout for Grouted Rock Riprap and Grouted No. 2 Backing Class | C.Y. | 320 | \$112.00 | 35,840.00 |

EXHIBIT contd.

| ITEM NO. | ITEM OF WORK | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|----------|---|------|----------|-----------|----------------|
| 53. | Filter Diaphragm Material | C.Y. | 32 | \$135.00 | 4,320.00 |
| 54. | Dust Abatement | L.S. | --- | --- | 28,600.00 |
| 55. | Stormwater and Non-Stormwater Pollution Control | L.S. | --- | --- | 75,000.00 |
| 56. | Color Varnish | S.F. | 84,000 | \$0.25 | 21,000.00 |
| | | | | TOTAL | \$9,849,777.00 |

Bond No: 58701839

Premium: \$66,174.00

Premium is for contract term and is subject to adjustment based on final contract price

Executed in 4 Counterparts

PERFORMANCE BOND

Recitals:

1. Hal Hays Construction, Inc. (Contractor) has entered into an Agreement dated February 26, 2013 with the Riverside County Flood Control and Water Conservation District (District) for construction of public work known as **Project No. 6-0-00190, Eagle Canyon Dam and Debris Basin.**

2. Western Surety Company, a South Dakota corporation (Surety), is the surety under this Bond.

Agreement: We, Contractor as principal, and Surety as surety, jointly and severally agree, state, and are bound unto District, as obligee, as follows:

1. The amount of the obligation of this Bond is 100% of the estimated contract price for the Project of \$9,849,777.00 * and inures to the benefit of District.

* Nine Million Eight Hundred Forty Nine Thousand Seven Hundred Seventy Seven Dollars & 00/100

2. This Bond is exonerated by Contractor doing all things to be kept and performed by it in strict conformance with the Contract Documents for the Project, otherwise it remains in full force and effect for the recovery of loss, damage and expense of District resulting from failure of Contractor to so act. All of said Contract Documents are incorporated herein.

3. This obligation is binding on our successors and assigns.


4. For value received, Surety stipulates and agrees that no change, time extension, prepayment to Contractor, alteration or addition to the terms and requirements of the Contract Documents or the work to be performed thereunder shall affect its obligations hereunder and waives notice as to such matters, except the total contract price cannot be increased by more than 25% without approval of Surety.

THIS BOND is executed as of February 26, 2013

Hal Hays Construction, Inc.

Western Surety Company

By 



By _____

Type Name William Syrkin

Its Attorney in Fact (Surety)

Title Hal Hays, President/CEO
(Contractor)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledged (attach acknowledgments).

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Owen Brown, Richard Adair, William Syrkin, Sergio D Bechara, Margaret Gilmore, Rebecca Haas-Bates, Individually

of Irvine, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 24th day of October, 2012.



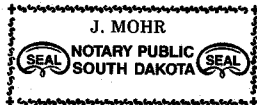
WESTERN SURETY COMPANY

Paul T. Bruflat
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 24th day of October, 2012, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2015



J. Mohr
J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 26th day of February, 2013.



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Orange

On 02/06/2013
Date

before me, A. Wilkison, Notary Public

Here Insert Name and Title of the Officer

personally appeared William Syrkin

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

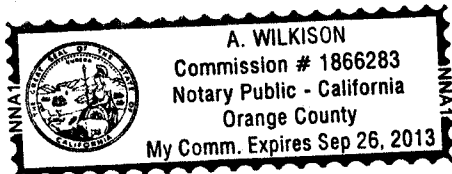
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

A. Wilkison

Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Performance Bond No. 58701839

Document Date: 02/26/2013

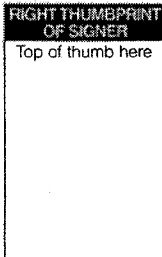
Number of Pages: One (1)

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: William Syrkin

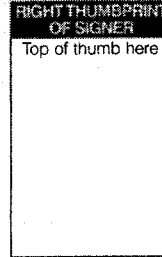
- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: Western Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

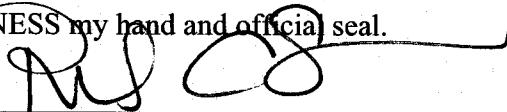
County of Riverside

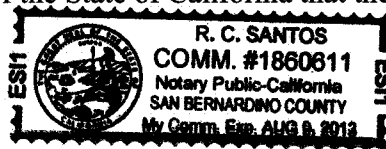
On 2/6/13 before me, Reta C. Santos, Notary Public
(Here insert name and title of the officer)

personally appeared Hal Hays / President & CEO

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

 Signature of Notary Public



(Notary Seal)

ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

| | |
|---|-----------------------------|
| DESCRIPTION OF THE ATTACHED DOCUMENT | |
| <u>Performance Bond</u> <small>(Title or description of attached document)</small> | |
| <u># 58701939</u> <small>(Title or description of attached document continued)</small> | |
| Number of Pages <u>1</u> | Document Date <u>2/6/13</u> |
| <small>(Additional information)</small> | |

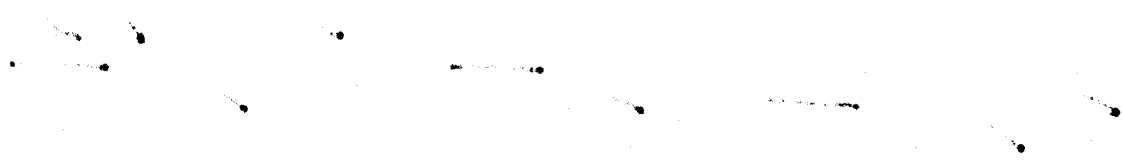
| | |
|---|--|
| CAPACITY CLAIMED BY THE SIGNER | |
| <input type="checkbox"/> Individual (s) <input checked="" type="checkbox"/> Corporate Officer <u>President / CEO</u> <small>(Title)</small> | |
| <input type="checkbox"/> Partner(s) <input type="checkbox"/> Attorney-in-Fact <input type="checkbox"/> Trustee(s) <input type="checkbox"/> Other _____ | |

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PAYMENT BOND

(Public Work - Civil Code, Section 3247 et seq.)

The makers of this Bond are Hal Hays Construction, Inc. as Principal and Original Contractor and Western Surety Company a corporation, authorized to issue Surety Bonds in California, as Surety, and this Bond is issued in conjunction with that certain public works contract dated February 26, 2013, between Principal and Riverside County Flood Control and Water Conservation District (District), a public entity, as Owner, for \$9,849,777.00*, the total amount payable. THE AMOUNT OF THIS BOND IS 100 PERCENT OF SAID SUM. Said contract is for public work generally consisting of the construction of **Eagle Canyon Dam and Debris Basin** project. The beneficiaries of this Bond are as is stated in Section 3248 of the Civil Code and the requirements and conditions of this Bond are as is set forth in Sections 3248, 3249, 3250 and 3252 of said Code. Without notice, Surety consents to extension of time for performance, change in requirements, amount of compensation, or prepayment under said contract.

* Nine Million Eight Hundred Forty Nine Thousand Seven Hundred Seventy Seven Dollars & 00/100

DATED: February 26, 2013

Hal Hays Construction, Inc.

Original Contractor - Principal

Western Surety Company

Surety



By 

Its Attorney in Fact

William Syrkin

Title Hal Hays, President/CEO

(If corporation, affix seal)

(Corporate Seal)

Please See Attached

STATE OF CALIFORNIA §
COUNTY OF _____

SURETY'S ACKNOWLEDGMENT

On _____ before me personally appeared _____ known to me to be the person whose name is subscribed to the within instrument as attorney in fact of, _____ a corporation, and acknowledged that he subscribed the name of said corporation thereto, and his own name as its attorney in fact.

Notary Public

(Seal)

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Owen Brown, Richard Adair, William Syrkin, Sergio D Bechara, Margaret Gilmore, Rebecca Haas-Bates, Individually

of Irvine, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 24th day of October, 2012.



WESTERN SURETY COMPANY

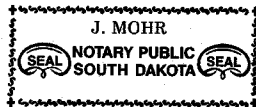
Paul T. Bruflat

Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 24th day of October, 2012, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2015



J. Mohr

J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 26th day of February, 2013.



WESTERN SURETY COMPANY

L. Nelson

L. Nelson, Assistant Secretary

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Orange



On 02/06/2013
Date

before me, A. Wilkison, Notary Public

Here Insert Name and Title of the Officer

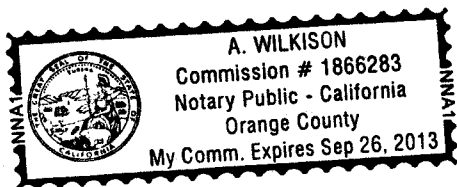
personally appeared William Syrkin

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Place Notary Seal Above

Signature

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Payment Bond No. 58701839

Document Date: 02/26/2013

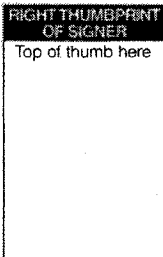
Number of Pages: One (1)

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: William Syrkin

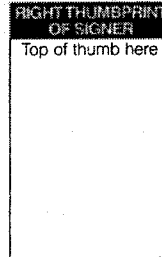
- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: Western Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of Riverside

On 2/6/13 before me, Reta C. Santos, Notary Public,
(Here insert name and title of the officer)

personally appeared Hal Hauss, President/CEO

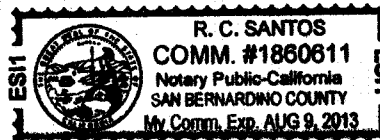
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Handwritten Signature]

Signature of Notary Public



(Notary Seal)

ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

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- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

DESCRIPTION OF THE ATTACHED DOCUMENT

Payment Bond
(Title or description of attached document)

#50701839
(Title or description of attached document continued)

Number of Pages 1 Document Date 2/26/13

(Additional information)

CAPACITY CLAIMED BY THE SIGNER

Individual (s)

Corporate Officer
President/CEO
(Title)

Partner(s)

Attorney-in-Fact

Trustee(s)

Other _____

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Faint handwritten text or markings in the lower middle section.

Faint handwritten text or markings on the right side, lower middle.

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/13/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | | |
|--|---|--------------------------------------|
| PRODUCER Patriot Risk & Insurance Services 8105 Irvine Center Drive #400 Irvine, CA 92618 www.patrisk.com 0G55454 | CONTACT NAME: | |
| | PHONE (A/C, No, Ext): (949) 486-7900 | FAX (A/C, No): (949) 486-7950 |
| E-MAIL ADDRESS: | | |
| INSURER(S) AFFORDING COVERAGE | | NAIC # |
| INSURER A: Valley Forge Insurance Company | | 20508 |
| INSURER B: Continental Casualty Company | | 20443 |
| INSURER C: Old Republic General Insurance | | 24139 |
| INSURER D: AGCS Marine Insurance Company | | 22837 |
| INSURER E: | | |
| INSURER F: | | |

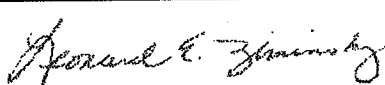
COVERAGES **CERTIFICATE NUMBER:** 15499856 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|----------|---|-----------|----------|---|-------------------------|-------------------------|---|
| A | GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC | | | 4025672964 | 11/1/2012 | 11/1/2013 | EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 |
| B | AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> \$1,000 Comp./Coll. Ded. | | | 4026352638 | 11/1/2012 | 11/1/2013 | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Medical payments \$ 5,000 Uninsured motorist comb \$ 1,000,000 |
| A | <input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$ | | | 4030398999 | 11/1/2012 | 11/1/2013 | EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 |
| C | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | Y/N | N/A | A1CW93421204 (For AZ, CA, NV, TX & HI) | 11/1/2012 | 11/1/2013 | <input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000 |
| D | Inland Marine | | | MXI93011459 | 11/1/2012 | 11/1/2013 | Scheduled Equipment: \$4,673,800 Leased/Rented Equipment: \$400,000 Deductible: \$1,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Re: HHCI #12209 Eagle Canyon Dam and Debris Basin Project No. 6-0-00190
 Riverside County Flood District and Water Conservation District, the County of Riverside, the City of Palm Springs, and the City of Cathedral City are named as Additional Insured and Waiver of Subrogation as respects to General Liability per endorsements attached where required by written contract. Workers Compensation Waiver of Subrogation applies per endorsement attached. No Exclusions for XCU in this policy. 30 days notice of cancellation, 10 days for non-payment of premium.

| | |
|---|---|
| CERTIFICATE HOLDER Riverside County Flood District and Water Conservation District 1995 Market Street Riverside CA 92501 | CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. |
| | AUTHORIZED REPRESENTATIVE  Leonard E. Ziminsky |

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ACORD 25 (2010/05)

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.
BLANKET ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE (OPTIONAL)

| Name of Additional Insured Person(s) Or Organizations |
|--|
| Riverside County Flood District and Water Conservation District, the County of Riverside, the City of Palm Springs, and the City of Cathedral City |

| Location(s) of Covered Operations |
|---|
| Re: HHCI #12209 Eagle Canyon Dam and Debris Basin Project No. 6-0-00190 |

(Coverage under this endorsement is not affected by an entry or lack of entry in the Schedule above.)

A. Section II - Who Is An Insured is amended to include as an additional insured any person(s) or organization(s), including any person or organization shown in the Schedule above, whom you are required to add as an additional insured on this Coverage Part under a written contract or written agreement, provided:

- a. The written contract or written agreement was executed prior to:
 - 1. The "bodily injury" or "property damage"; or
 - 2. The offense that caused the "personal and advertising injury"

for which the additional insured seeks coverage under this Coverage Part; and

- b. The written contract or written agreement pertains to your ongoing operations or "your work" for the additional insured(s).

B. The insurance provided to the additional insured is limited as follows:

- 1. The person or organization is an additional insured only with respect to liability for "bodily injury," "property damage," or "personal and advertising injury" caused in whole or in part by:
 - a. Your acts or omissions; or
 - b. The acts or omissions of those acting on your behalf

in the performance of your ongoing operations for the additional insured(s) or

- c. "Your work" that is included in the "products-completed operations hazard" and performed for the additional insured, but only if this Coverage Part provides such coverage, and only if the written contract or written agreement requires you to provide the additional insured such coverage.

- 2. However, we will not provide the additional insured any broader coverage or any higher limit of insurance than the least of those:

- a. Required by the written contract or written agreement;
- b. Described in B.1. above; or
- c. Afforded to you under this policy.

- 3. This insurance is excess of all other insurance available to the additional insured, whether primary, excess, contingent or on any other basis, unless the written contract or agreement requires this insurance to be primary. In that event, this insurance will be primary relative to insurance which covers the additional insured as a named insured. We will not require contribution from such insurance if the written contract or written agreement also requires that this insurance be non-contributory. But with respect to all other insurance under which the additional insured qualifies as an insured or



additional insured, this insurance will be excess.

4. The insurance provided to the additional insured terminates when your operations for the additional insured are complete. But if the written contract or written agreement specifies a date until which this insurance must apply, then this insurance terminates:
 - a. On the date specified in the written contract or written agreement; or
 - b. When this policy expires or is cancelled, whichever occurs first.

- C. With respect to the insurance afforded to the additional insured, the following additional exclusions apply.

This insurance does not apply to:

1. "Bodily injury," "property damage," or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering, or surveying services, including:
 - a. The preparing, approving, or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; and
 - b. Supervisory, inspection, architectural or engineering activities.
2. "Bodily injury," "property damage," or "personal and advertising injury" arising out of any premises or work for which the additional insured is specifically listed as an additional insured on another endorsement attached to this Coverage Part.

D. SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS is amended as follows:

1. The **Duties In The Event of Occurrence, Offense, Claim or Suit** condition is amended to add the following additional conditions applicable to the additional insured:

An additional insured under this endorsement will as soon as practicable:

- (1) Give us written notice of an "occurrence" or an offense which may result in a claim or "suit" under this insurance, and of any claim or "suit" that does result;
- (2) Tender the defense and indemnity of any claim or "suit" to any other insurer or self insurer whose policy or program applies to a loss we cover under this Coverage Part;
- (3) Except as provided in Paragraph B.3 of this endorsement, agree to make available any other insurance the additional insured has for a loss we cover under this Coverage Part; and
- (4) Send us copies of all legal papers received, and otherwise cooperate with us in the investigation, defense, or settlement of the claim or "suit."

We have no duty to defend or indemnify an additional insured under this endorsement until we receive from the additional insured written notice of a claim or "suit."

2. With respect only to the insurance provided by this endorsement, the first sentence of Paragraph 4.a. of the Other Insurance Condition is deleted and replaced with the following:

4. Other Insurance

a. Primary Insurance

This insurance is primary and non-contributory except when rendered excess by this endorsement, or when Paragraph b. below applies.

- E. The provisions of the written contract or written agreement do not in any way broaden or amend this Coverage Part.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Person Or Organization:

ANY PERSON OR ORGANIZATION WITH WHOM THE INSURED HAD AGREED TO WAIVE RIGHT OF RECOVERY, PROVIDED SUCH AGREEMENT IS MADE IN WRITING AND PRIOR TO THE LOSS

Re: HHCI #12209 Eagle Canyon Dam and Debris Basin Project No. 6-0-00190
Riverside County Flood District and Water Conservation District, the County of Riverside,
the City of Palm Springs, and the City of Cathedral City

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 8. **Transfer Of Rights Of Recovery Against Others To Us** of Section IV – Conditions:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

OLD REPUBLIC GENERAL INSURANCE CORPORATION
WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY
WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

Re: HHCI #12209 Eagle Canyon Dam and Debris Basin Project No. 6-0-00190
 Riverside County Flood District and Water Conservation District, the County of Riverside, the City of Palm Springs, and the City of Cathedral City

The premium charge for this endorsement is \$0.00

| | | | |
|------------------|--|-----------------------------|-----------|
| Named Insured | Hal Hays Construction, Inc. | | |
| Policy Number | 1CW9421204 | Endorsement No. | 000 |
| Policy Period | 11/1/2012 to 11/1/2013 | Endorsement Effective Date: | 11/1/2012 |
| Producer's Name: | OLD REPUBLIC CONSTRUCTION INSURANCE AGENCY, INC. | | |
| Producer Number: | 0000007000 | | |

Howard E. Ziminsky

AUTHORIZED REPRESENTATIVE

2/1/2013

DATE

WC 99 03 15 (01/07)

GENERAL PROVISIONS

GENERAL PROVISIONS

SECTION I - DEFINITION OF TERMS

1.01 Whenever in these specifications, or in any documents or instruments where these specifications govern, the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

(a) DISTRICT: The Riverside County Flood Control and Water Conservation District of the State of California, as created by law, also sometimes referred to as the Flood Control District, or party of the first part.

(b) BOARD OF SUPERVISORS: The Board of Supervisors of the Riverside County Flood Control and Water Conservation District as created by law, also sometimes referred to as the Board.

(c) ENGINEER: The Chief Engineer of the Riverside County Flood Control and Water Conservation District, also sometimes referred to as the Flood Control Engineer, the Chief Engineer, or the General Manager-Chief Engineer, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

(d) LABORATORY: The established laboratory of the Riverside County Road Department or laboratories authorized by the District to test materials and work involved in the contract.

(e) BIDDER: Any individual, firm or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

(f) CONTRACTOR: The person or persons, copartnership or corporation, private or municipal, who have entered into a contract with the District, as party or parties of the second part or his or their legal representatives.

(g) SUPERINTENDENT: The Executive representative of the Contractor, present on the work at all times during progress, authorized to receive and execute instruction from the Engineer.

(h) PLANS: The official plans, profiles, typical cross sections, general cross sections, working drawings, and supplemental drawings, or exact reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be done, and which are to be considered as a part of the contract supplementary to these specifications.

(i) SPECIFICATIONS: The directions, provisions, and requirements contained herein as supplemented by such special provisions, as may be necessary, pertaining to the method and manner of performing the work or to the quantities and qualities of materials to be furnished under the contract. The Special Provisions are specific clauses setting forth conditions or requirements peculiar to the project under consideration and covering work or materials involved in the proposal and estimate but not satisfactorily covered by these General Provisions. Supplemental agreements or contract change orders are written agreements executed by the

Contractor and by the District, covering alterations, amendments or extensions to the project, as hereinafter provided.

(j) CONTRACT: The written agreement covering the performance of the work and the furnishing of labor and materials in the construction of the work. The contract shall include the Notice to Contractors, the Proposal, Plans, Specifications, Special Provisions, and Contract Bonds, also, any and all supplemental agreements or contract change orders amending or extending the work contemplated and which may be required to complete the work in a substantial and acceptable manner.

(k) CONTRACT PRICE: Shall mean either the lump sum, unit price, or unit prices to be named in the contract, or the total of all payments under the contract at the lump sum, unit price, or unit prices, as the case may be.

(l) SURETY OR SURETIES: The bondsmen or party or parties, approved by the Engineer, who may guarantee the fulfillment of the contract by bond, and whose signatures are attached to said bond.

(m) RIGHT OF WAY: The whole right of way which is reserved for and secured for use in constructing the improvement.

(n) THE WORK: All the work specified in the Special Provisions, proposal and contract, or indicated on the plans as the contemplated complete improvement covered by the contract.

1.02 Wherever in the specifications or upon the plans the words directed, required, permitted, ordered, designated, prescribed, or words of like import are used, it will be understood that the direction, requirements, permission, order, designation, or prescription of the Flood Control Engineer 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 Flood Control Engineer, unless otherwise expressly stated.

SECTION II - SCOPE OF WORK

2.01 WORK TO BE DONE

It is the intent of these General Provisions, Special Provisions, Detailed Specifications, and the plans herein referred to, to provide for and include all labor, power, light, water, materials, tools, scaffolding, machinery, plant transportation, insurance, permits, bonds, temporary protection, watchmen, and superintendence necessary to construct and complete all work, and to furnish all materials included in the contract, except those furnished by the District and as specifically mentioned in these specifications.

The contract documents are complementary, and the work called for by any one shall be as binding as if called for by all.

2.02 CONSTRUCTION SCHEDULE

The Contractor shall submit at such times as may be requested by the Engineer, a schedule which shall show the order and dates in which the Contractor proposes to carry on the various parts of the work; including estimated completion dates.

2.03 DRAWINGS AND SPECIFICATIONS ON THE WORK

The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the Engineer and his representatives.

2.04 ESTIMATE OF QUANTITIES

The quantities of work to be done and the materials to be furnished under this contract are approximate only. The District is not to be held responsible for the accuracy of the estimate of quantities.

The Contractor shall judge for himself, after considering all circumstances and conditions, the costs and quantities of materials involved in the contract. The Contractor shall not at any time assert that there was any misunderstanding in regard to the depth or class of the excavations to be made, or the nature or kind or amount of materials to be furnished for the work.

The Contractor herewith agrees that he will not ask, demand, sue for, or seek to recover, for compensation in excess of the amounts payable for the various unit costs or lump sum charges for the work, as stipulated in the proposal, which he actually performs as specified.

2.05 PROTESTS

If the Contractor considers any work demanded of him to be outside of the requirements of the contract, or considers any record or ruling of the Engineer to be unfair, he shall immediately, upon such work being demanded or such record or ruling being made, ask, in writing, for written instructions covering protested items of work. Immediately on receipt of written instructions from the Engineer he shall proceed without delay to diligently perform the work in conformance with the written record or ruling. Within ten (10) calendar days after date of receipt of the written instructions or ruling, the Contractor shall file a written protest with the Engineer stating clearly and in detail the basis of his protest. Except for such protests as are made of record in the manner herein specified and within the time limit stated, the records, rulings, instructions, or decisions of the Engineer shall be final and conclusive.

2.06 ALTERATIONS

It must be distinctly understood that such reasonable alterations and modifications may be made by the Chief Engineer, as may be deemed desirable, and that this may be done without notices to the Sureties on the Contractor's bonds. If such changes result in increased or decreased quantities under the items specified in the proposal, the Contractor will be paid on the basis of actual quantities as measured by the Engineer, and such changes shall not affect the unit prices bid by the Contractor. If, however, such changes result in delay to the work, the

Contractor will be given such extension of time on the completion of his contract as the Chief Engineer may deem equitable.

2.07 EXTRA WORK

A. General

The District reserves and shall have the right, when confronted with unpredicted conditions, unforeseen events, or emergencies, to revise the details of the contemplated work, or to add work of a different character or function and have the Contractor perform such revised or added work as "Extra Work", when such extra work is considered by the Chief Engineer to be virtually appurtenant to the satisfactory completion of the project.

"Extra Work" is defined as added work of a different character or function and for which no basis for payment is prescribed; or that involving revisions of the details of the work in such manner as to render inequitable payment under items upon which the Contractor bid; or that work which is indeterminate at the time of advertising and is specifically designated as extra work in the plans and Special Provisions.

The signing of the contract by the Contractor will be deemed to be an agreement on his part to perform extra work, as and when ordered by the Chief Engineer. Notice to the Sureties on the Contractor's bonds will not be given unless the estimated total value of the contract, as changed or supplemented, shall exceed the original total bid price by more than 25 percent.

If required extra work results in delay to the work, the Contractor will be given an equivalent extension of time.

Approval of extra work shall be obtained from the Board of Supervisors before such work is authorized to be done, if:

- a. For contracts with a total contract price of \$250,000 or less, a change due to extra work exceeds ten percent (10%) of the original contract amount; or
- b. For contracts with a total contract price of more than \$250,000, a change due to extra work exceeds \$25,000 plus one percent (1%) of the original contract amount in excess of \$250,000; or
- c. An individual change exceeds \$100,000; or
- d. Cumulative contract changes exceed ten percent (10%) of the original contract amount.

Extra work specially authorized by the Board of Supervisors shall not be included in the cost limitations above stated.

B. Procedure for Extra Work

1. Upon decision of the District to have extra work performed, the Chief Engineer will so inform the Contractor, acquainting him with the essential details of the new work. The Contractor shall thereupon prepare a price for said work based upon his estimate of cost and submit said price and estimate to the Chief Engineer whose approval shall be secured before work is started; excepting that the Chief Engineer may, when in the best interest of the District, order the Contractor to proceed with the extra work in advance of the submission of such prices, provided that preliminary estimates, as made by the District, show that the cost will not exceed \$1,000.

2. Prices for extra work shall be prepared by the Contractor on one or both of the following methods, as requested by the District, and submitted to the Chief Engineer for approval:

a. For a stated unit price or lump sum amount based upon current prevailing fair prices for materials, labor, plant, overhead and profit.

b. On a cost basis (force account by the Contractor). The cost of all work done by the Contractor will be computed in the manner described in Section 7.03, and the compensation thus provided shall be accepted as payment in full by the Contractor, and no additional payment will be allowed for the use of small tools, superintendent's services, timekeeper's services, pickup or yard trucks, except as specifically essential to the work, nor any other overhead expenses incurred in the prosecution of the force account work.

3. Upon receipt of the Contractor's price, the Chief Engineer will make an analysis thereof and adopt one of the following procedures:

a. Accept the Contractor's price for lump sum or unit price amount in the original or amended form and direct him to proceed with the work; or direct him to perform the work on a cost plus basis.

b. Have the work performed by District's forces or separate contract, without undue interference or hindrance to the Contractor and without claim or suit by the Contractor for damages on account thereof.

c. Direct the Contractor to proceed with the work and accept payment therefor in the amount as adjudicated later in a court of law.

2.08 PAYMENT FOR EXTRA WORK

At the end of each month the Contractor shall make and deliver to the Chief Engineer a statement of the cost of the extra work completed during the current month, itemized and in a form satisfactory to the Chief Engineer. Upon verification of said statement by the Chief Engineer, the Contractor's claim for the full amount, as shown on said statement, will be added to the monthly partial payment made in accordance with Paragraph 7.06 of the General Provisions.

2.09 RIGHTS OF WAY

The District shall provide the rights of way upon which the work under this contract is to be done, except that the Contractor shall provide land required for the erection of temporary construction facilities and storage of his material, together with right of access to same. The District will not be responsible for any delay in furnishing the rights of way and such delay shall not be made the basis for a claim for additional compensation by the Contractor. However, in case the failure of the District to furnish the required rights of way delays the prosecution of the work, the time allowed for completion will be extended by a period of time equal to that lost by the Contractor due to such delay.

2.10 CLEANING UP

The Contractor shall, as directed by the Engineer, remove from the District's right of way and from all public and private property, at his own expense, all temporary structures, rubbish and waste materials resulting from his operations.

SECTION III - CONTROL OF THE WORK

3.01 AUTHORITY OF THE ENGINEER

The Engineer shall have general supervision and direction of the contract under authority of the Board of Supervisors. He has the authority to stop the work whenever such stoppage may be necessary to ensure the proper execution of the contract. The Engineer shall decide all questions which may arise as to the quality or acceptability of materials furnished, work performed, and rate or progress of the work; all questions which may arise as to the interpretation of the plans and specifications; all questions as to the acceptable fulfillment of the contract on the part of the Contractor; and all questions as to compensation.

His determination and decision thereon shall be final and conclusive; and such determination and decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money hereunder.

3.02 DETAIL DRAWINGS

The approved plans shall be supplemented by such working drawings as are necessary to control the work adequately. All authorized alterations affecting the requirements and information given on the approved plans shall be in writing. No changes shall be made of any plan or drawing after the same has been approved by the Engineer, except by his direction.

It is expressly understood, however, that approval by the Engineer of the Contractor's working drawings does not relieve the Contractor of any responsibility for accuracy of dimensions and details. It is mutually agreed that the Contractor shall be responsible for agreement and conformity of his working drawings with the approved plans and specifications.

Full compensation for furnishing all working drawings shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefor.

3.03 CONFORMITY WITH PLANS AND ALLOWABLE DEVIATIONS

Finished surfaces in all cases shall conform with the lines, grades, cross-sections, and dimensions shown on the approved plans. Deviations from the approved plans and working drawings, as may be required by the exigencies of construction, will in all cases be determined by the Engineer and authorized in writing.

3.04 INTERPRETATION OF PLANS AND SPECIFICATIONS

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in these specifications and the Special Provisions, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform to the same part of the contract, so far as may be consistent with the original specifications; and in the event of any doubt or questions arising respecting the true meaning of the specifications; reference shall be made to the Engineer, whose decision thereon shall be final.

In the event of any discrepancy between any drawings and the figures written thereon, the figures shall be taken as correct. The Contractor will not be allowed to take advantage of errors and omissions in the drawings and specifications. When errors or omissions are found, they will be corrected or supplied by the Engineer.

3.05 SUPERINTENDENCE

The Contractor shall keep on his work, continually during its progress, a competent Superintendent responsible for the construction of the work, and any necessary assistants; all satisfactory to the Engineer. The Superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case.

3.06 LINES AND GRADES

The Contractor shall provide reasonable and necessary opportunities and facilities for setting points and making measurements. He shall not proceed until he has made timely demand upon the Engineer for, and has received from him, such lines and grades as may be necessary as the work progresses. The work shall be done in strict conformity with such lines and grades.

The Contractor shall carefully preserve benchmarks, reference points and stakes, and in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

3.07 INSPECTION OF WORK

The Engineer and his representatives shall at all times have access to the work during its construction, and shall be furnished with every reasonable facility for ascertaining that the stock and materials used and employed, and the workmanship, are in accordance with the requirements and intentions of these specifications. All work done and all materials furnished shall be subject to the Engineer's inspection and approval to ensure design objectives.

The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill his contracts as prescribed, and defective work shall be made good and unsuitable materials may be rejected, notwithstanding that such defective work and materials have been previously overlooked by the Engineer and accepted or estimated for payment.

3.08 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All work which has been rejected shall be remedied, or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed him for such removal or replacement. Any work done beyond the lines and grades shown on the plans or established by the Engineer, or any extra work done without written authority, will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor's expense. Upon failure on the part of the Contractor to comply forthwith with any order of the Engineer made under the provisions of this article, the Engineer shall have authority to cause defective work to be remedied, or removed and replaced, and unauthorized work to be removed and to deduct the costs for this work from any monies due or to become due the Contractor.

3.09 EQUIPMENT AND PLANT

Equipment not suitable to produce the quality of work required will not be permitted to operate on the project. Plants shall be designed and constructed in accordance with general practice for such equipment and shall be of sufficient capacity and of such character to ensure the production of sufficient material to carry the work to completion within the time limit.

The Contractor shall provide adequate and suitable equipment and plants to meet the above requirements and, when ordered by the Engineer, shall remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants. No worn or obsolete equipment shall be used, and in no case shall the maker's rating of the capacity for any equipment be exceeded.

All vehicles used to haul materials over existing highways shall be equipped with pneumatic tires.

3.10 FINAL INSPECTION

The Engineer will not make the final inspection until the work provided for and contemplated by the contract has been completed and the final cleaning up performed.

SECTION IV - CONTROL OF MATERIAL

4.01 DISTRICT FURNISHED MATERIALS

The Contractor shall furnish all materials required to complete the work, except those specified in the Special Provisions to be furnished by the District. Materials furnished by the District will be delivered to the Contractor at the points specified in the Special Provisions.

The Contractor will be held responsible for all materials so delivered to him, and deductions will be made from any monies due him to make good any shortages and deficiencies,

from any cause whatsoever, which may occur after such delivery, or for any demurrage charges due to delinquency in unloading.

4.02 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

At the option of the Engineer the source of supply of each of the materials shall be approved by him before the delivery is started. Only materials conforming to the requirements of these specifications and approved by the Engineer shall be used in the work. All materials proposed for use may be inspected or tested at any time during their preparation and use. If, after trial, it is found that sources of supply which have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources. No material which, after approval, subsequently becomes unfit for use shall be used in the work.

4.03 SAMPLES AND TESTS

All tests of materials furnished by the Contractor shall be made by the District in accordance with commonly recognized standards of national organizations, and such special methods and tests as are in use at the District's approved laboratory and described in the Detailed Specifications.

Field tests of materials will also be made by the Engineer when deemed necessary and these tests shall be made in accordance with standard practices of the District.

The Contractor shall furnish such samples of all materials as are requested by the Engineer without charge. No material shall be used until it has been approved by the Engineer. Samples will be secured and tested whenever necessary to determine the quality of the material.

Promptly after the approval of the contract, the Contractor shall notify the Engineer of the proposed sources of supply of all materials to be furnished by him, using a form which will be supplied by the Engineer upon request.

Whenever reference is made in these specifications to standard tests or requirements of the laboratory of the District, the American Society for Testing Materials, the American Railway Engineering Association, or the American Association of State Highway Officials, the reference shall be construed to mean the standards that are in effect at the date of these specifications with subsequent amendments, changes, or additions as thereafter adopted and published by the organization referred to.

4.04 STORAGE OF MATERIALS

Materials shall be so stored as to ensure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground. They shall be placed under cover when so directed. Stored materials shall be so located as to facilitate prompt inspection.

4.05 DEFECTIVE MATERIALS

All materials not conforming to the requirements of these specifications shall be considered as defective and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the work unless otherwise permitted by the Engineer. No rejected materials, the defects of which have been subsequently corrected, shall be used until approval in writing has been given by the Engineer. Upon failure on the part of the Contractor to comply forthwith with any order of the Engineer made under the provisions of this article, the Engineer shall have authority to remove and replace defective material and to deduct the cost of removal and replacement from any monies due or to become due the Contractor.

4.06 ASSIGNMENT OF CLAIMS

In submitting a bid on this public works project, or any subcontractor agreeing to supply goods, services, or materials, and entering a contract pursuant thereto, the Contractor and/or subcontractor do offer and agree to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

SECTION V - LEGAL RELATIONS AND RESPONSIBILITY

5.01 LAWS TO BE OBSERVED

(a) Compliance with Applicable Law. Reference to and/or incorporation into the Contract Documents of a particular law, statute, ordinance, rule or regulation is not, nor is it intended to be, a definitive statement of the law applicable to the Contract Documents and the accomplishment of the work. Contractor must keep informed as to all such applicable law - Federal, State, County, Municipal, District - as it affects the conduct of the work and comply with such law, including, but not limited to, having requisite licenses, obtaining necessary permits, paying necessary fees and taxes, posting notices and installing, operating and maintaining safety precautions and facilities. It is likewise Contractor's responsibility to see to it that his subcontractors also fully comply with such applicable law.

If at any time Contractor is of the opinion that there is a discrepancy or inconsistency in the plans, drawings, specifications or other Contract Documents, he shall immediately cease work involving such alleged discrepancies or inconsistencies and report the same in writing to the Chief Engineer and shall not proceed with such work until ordered so to do, and in the manner instructed by the Chief Engineer.

Contractor shall protect and defend District, its officers, agents and employees against any claim or liability arising from or based upon any alleged violation of such applicable law. See also Subsection 8.02.

(b) Labor Code - Reference is made to Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with Section 1720). By this reference said Chapter 1 is incorporated herein with like effect as if it were here set forth in full. The parties recognize that said Chapter 1 deals with, among other things, discrimination, penalties and forfeitures, their disposition and enforcement, wages, working hours and securing workers' compensation insurance and directly affect the method of prosecution of the work by Contractor and subject it under certain conditions to penalties and forfeitures. Execution of the Agreement by the parties constitutes their agreement to abide by said Chapter 1. Their stipulation as to all matters which they are required to stipulate as to by the provisions of said Chapter 1, constitutes Contractor's certification that it is aware of the provisions of said Chapter 1 and will comply with them and further constitutes Contractor's certification as follows: "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract." Contractor and its subcontractors shall comply with the provisions of S1777.5 of the Labor Code regarding apprentices.

Contractor shall post at each job site during the course of the work a copy of County's "Determination of Prevailing Wage Rates", copies of said Determination are available from County for this purpose.

(c) Equal Employment Opportunity

General - Contractor shall not discriminate in its recruiting, hiring, promotion, demotion or termination practices on the basis of race, religious creed, color, national origin, ancestry, sex, age or physical handicap in the performance of this Contract and shall comply with the provisions of the Government Code Section (commencing with §12900 et seq.), the Federal Civil Rights Act of 1964 (P.L. 88-352) and all amendments thereto, Executive Order No. 11246 (30 Federal Register 12319), as amended, and all administrative rules and regulations issued pursuant to said Acts and Order. See particularly 41 Code of Federal Regulation (CFR) Chapter 60.

Contractor shall require each of its subcontractors to comply with the preceding paragraph and shall include in each subcontract language similar to the preceding paragraph.

Contractor shall permit access to its records of employment, employment advertisement, application forms and other pertinent data and records by Owner and any state or federal agency having jurisdiction for the purpose of investigation to ascertain compliance with this Section.

Owner may assign an affirmative action representative to monitor Contractor and its subcontractor(s) conduct required by this Section, including the right of entry to the construction site for the purpose of obtaining information from persons performing work on the project providing such inspection does not interfere with the progress of the work.

Elsewhere in the Contract Documents specific requirements may be contained covering the same subject matter of this Section. If so, such specific requirements prevail over this Section in case of conflict.

Transactions of \$10,000 or under - Contracts and subcontracts not exceeding \$10,000 are exempt from the requirements of this Section. No Contractor or subcontractor shall procure supplies and/or services in less than usual quantities to avoid applicability of this Section. With respect to contracts and subcontracts for indefinite quantities, this Section applies unless the amount required in any one year under such contract will reasonably be expected not to exceed \$10,000.

Transactions in Excess of \$10,000 but less than \$50,000 - At Owner's request, Contractor shall certify that it has in effect an affirmative action plan and agrees to comply with all state and federal laws and regulations regarding Fair Employment Practices. Contractor shall maintain a written copy of its affirmative action plan and furnish Owner a copy of the plan upon request. Owner may require Contractor to complete an Affirmative Action Compliance Report, on a form furnished by Owner, setting forth definite goals during the term of this contract.

Transactions of \$50,000 or more - If Contractor has 50 or more employees and a contract for \$50,000 or more, it shall develop and submit to Owner, within 30 days after award, a written affirmative action compliance program providing in detail specific steps to guarantee equal employment opportunity. Contractor shall include in its affirmative action program a table of job classifications, which table shall include but need not be limited to job titles, duties and rates of pay.

Contractor shall in each subcontract let to do a portion of the work covered hereunder, where the subcontractor involved has 50 or more employees and the subcontract is for \$50,000 or more, impose in the subcontract the above requirements.

For the purpose of determining the number of employees, the average of the Contractor's or its subcontractor's employees for the 12 month period immediately prior to award, or the total number of employees Contractor or its subcontractor will have when performing this contract, whichever is higher, shall be used.

Federally Assisted Construction - If this project is a Federally assisted construction project, then the contract provisions contained 41 CFR S60-1.4(b) are incorporated herein and Contractor shall likewise incorporate said provisions in each subcontract entered into by Contractor to perform the work. Federally assisted construction is identified as such in the Notice Inviting Bids.

(d) Registration of Contractors - In order to be considered a prospective bidder must be licensed in accordance with Division 3, Chapter 9 (commencing with Section 7000) of the Business and Professions Code.

(e) Accident Prevention - Particular attention shall be given to relevant Division of Industrial Safety Construction and Electrical Safety Orders. Said Orders are contained in Title 8 of the California Administrative Code, Chapter 4, Subchapters 4 and 5. Specific attention shall be taken of the California Occupational Safety and Health Act of 1973 (commencing with Section 6300 of the Labor Code) and the Federal Occupational Safety and Health Act of 1970 (P.L. 91-596) and rules and regulations issued pursuant to said Acts. Specific reference is made to Article 6 of said Construction Safety Orders. Contractor shall submit to Engineer, who will

accept in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping of the sides of trenches, or other provisions to be made for protection of personnel during earthwork operations. In event the Contractor's plan does not conform with the shoring system requirements of Article 6, the Contractor's proposed shoring design shall be prepared and signed by a civil or structural engineer registered in the State of California.

The Contractor shall also impose the foregoing requirements on all subcontractors involved and enforce compliance therewith.

The duties here set forth are nondelegable by Contractor who shall protect and defend District, its officers, agents and employees in connection therewith. See Subsection 8.02.

5.02 CONTRACTOR'S RESPONSIBILITY

Contractor is under the absolute duty in fulfilling its contractual obligations hereunder to proceed, and cause its subcontractors to proceed, in a safe, workmanlike manner, with adequate safeguards for the protection of the public, the workmen and persons from time to time inspecting the work. If at any time Contractor finds any of its subcontractors are allowing work to proceed in an unsafe manner and contrary to the intent of these Contract Documents, Contractor shall immediately cause such action to stop and immediately take all action necessary to protect workmen, inspectors and the general public and cause the work to proceed in a safe manner.

Contractor shall protect and defend District, its officers, agents and employees in reference to acts or omissions contrary to the above. See particularly Subsection 8.02.

District may withhold funds otherwise due Contractor whenever, in its judgment, this subsection is not being complied with.

5.03 CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the formal acceptance of the work by the District, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the nonexecution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before its completion and acceptance and shall bear the expense thereof, except for such injuries or damages as are occasioned by acts of the Federal Government and the public enemy. In case of suspension of work from any cause whatever, the Contractor shall be responsible for all materials and shall properly store them if necessary and shall erect temporary structures where necessary.

5.04 PROPERTY RIGHTS IN MATERIALS

Nothing in the contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil. All such materials shall become the property of the District upon being so attached or affixed.

5.05 PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work.

5.06 ROYALTIES AND PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated on the work, and agrees to indemnify and save harmless the Riverside County Flood Control District, the Board of Supervisors, the Flood Control Engineer, and their duly authorized representatives, from all suits at law, or actions of every nature for, or on account of, the use of any patented materials, equipment, devices, or processes.

5.07 SANITARY PROVISIONS

Necessary conveniences, properly secluded from public observation shall be provided by the Contractor where needed for the use of laborers on the work. Their location, construction and maintenance shall be subject to the approval of the Engineer, and their use shall be strictly enforced. The Contractor shall obey and enforce such sanitary regulations as may be prescribed by the State Department of Health or other authorities having jurisdiction.

5.08 PUBLIC SAFETY

The Contractor at his own expense shall furnish, erect, and maintain such fences, barriers, lights, and signs as are necessary to give adequate warning to the public at all times that the bridges, culverts, and work along public highways are under construction; and of any dangerous conditions to be encountered as a result thereof; and he shall erect such warning and directional signs and employ such flagmen as are required and maintain same throughout the construction period.

Full compensation for the work involved in carrying out the precautionary measures above specified shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefor.

5.09 USE OF EXPLOSIVES

When the use of explosives is necessary for the prosecution of the work, the Contractor shall use the utmost care not to endanger life or property.

All explosives shall be stored in accordance with the provisions of Division II, Part I, Chapter 3, of the Health and Safety Code of the State of California.

5.10 PROVISIONS FOR EMERGENCIES

Unusual conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from danger or loss or damage to life and property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

The Contractor shall use such foresight and shall take such steps and precautions as his operations make necessary to protect the public from danger or damage, or loss of life or property, which would result from the interruption or contamination of public water supply, irrigation or other public service, or from the failure of partly completed work.

Whenever work is undertaken pursuant to the above provisions, Contractor shall promptly file with District a verified report setting forth the nature of the emergency and the action taken by the Contractor by reason of the emergency.

Whenever, in the opinion of the Engineer, an emergency exists against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by process of construction on account of such neglect; and whenever, in the opinion of the Engineer, immediate action shall be considered necessary in order to protect public or private, personal or real property interests, or prevent likely loss of human life or damage on account of the operations under the contract, then and in that event the Engineer may provide suitable protection to said interests by causing such work to be done and material to be furnished as, in the opinion of the Engineer, may seem reasonable and necessary.

The cost and expense of all such emergency work shall be borne by the Contractor, and if he shall not pay said cost and expense upon presentation of the bills therefor, duly certified by the Engineer, then said cost and expense will be paid by the District and shall thereafter be deducted from any amounts due, or which may become due said Contractor. Failure of the District, however, to take such precautionary measures, shall not relieve the Contractor of his full responsibility for public safety.

5.11 UNFORESEEN DIFFICULTIES

All loss or damages, except as noted in Section 8.03, arising out of the nature of the work to be done under the contract, or from any unforeseen obstructions or difficulties which may be encountered during the progress of the work and in the prosecution of the same, or from the action of the elements, or from encumbrances in the line of work, shall be sustained by the Contractor.

5.12 ACCESS TO THE WORK

Access to the work from existing roads shall be provided by the Contractor at his expense and maintained in a manner so as not to create a public nuisance. The Board of Supervisors, Flood Control District and Engineer assume no responsibility for the condition or maintenance of any existing road or structure thereon that may be used by the Contractor for performing the work under these specifications and for traveling to and from the site of the work. No direct payment will be made to the Contractor for constructing temporary roads used for construction operations or for improving, repairing, or maintaining any existing road or structure thereon that may be used by the Contractor for performance of the work under these specifications. The cost of all work described in this paragraph shall be included in the prices bid in the schedule for other items of construction work.

5.13 GUARANTEE OF WORK

All work is guaranteed by Contractor for a period of one year from the recordation of the Notice of Completion against defects resulting from the use of inferior materials, equipment, or workmanship. Upon notice from District, Contractor shall promptly remedy such defects at his expense, including payment to District of its expenses in connection with remedying such defects, otherwise District shall proceed to remedy such defects and Contractor shall upon demand reimburse District for its expenses in connection therewith.

The above one year guarantee is in addition to any specific guarantee(s) provided for elsewhere in the Contract Documents.

5.14 DAMAGES BY ACT OF GOD

If the construction of the project herein is damaged, which damage is determined to have been proximately caused by an act of God, in excess of 5% of the contract amount, provided that the work damaged is built in accordance with applicable building standards and the plans and specifications, then the District, may, without prejudice to any other right or remedy, terminate the contract.

SECTION VI - PROSECUTION AND PROGRESS

6.01 PROGRESS OF THE WORK

The Contractor shall begin the work within ten (10) calendar days after the date of the receipt by him of notice to proceed from the Chief Engineer and shall diligently prosecute the same to completion within the time limit provided in the Special Provisions.

6.02 OVERTIME WORK AND WORK AT NIGHT

It is intended that the Contractor prosecute the work on a five (5) day, forty (40) hour work week with no work on legal holidays. If the Contractor feels it is necessary to work more than the normal 40 hour work week, he will make a written request for permission from the Engineer, outlining the reasons for such request. The decision of granting permission for overtime work shall be made by the Engineer and shall be final. A condition will be imposed on the granting of a request to work overtime, requiring the Contractor to pay the District the cost incurred at overtime rates for additional inspection and engineering time required in connection with the overtime work.

When any work is performed at night, only such classes of work shall be done as can be properly inspected. Adequate light must be provided for the safety of the men and for proper inspection.

6.03 SUBCONTRACTING

Reference is made to the Subletting and Subcontracting Fair Practice Act contained in the Public Contract Code (commencing §4100). By this reference, said Act is incorporated herein with like effect as if it were here set forth in full and the parties shall abide by its terms and substitution shall be only as allowed by that Act.

Contractor shall be responsible for the acts and omissions of its subcontractors and shall make certain that at all times its subcontractors comply with the terms of the Contract Documents and applicable law insofar as such compliance relates to the work.

District reserves the right to approve all subcontractors whether or not they are required to be listed in the Contractor's Proposal. As used in this Section "subcontractor" includes any person who fabricates or manufactures any article for incorporation into the work whether or not they install or test after installation or contract to install or test after installation, but does not include suppliers of fungible goods for incorporation into the work unless such supplier also installs or tests or contracts to install or test.

The Contractor shall give his personal attention to the fulfillment of the contract and shall keep the work under his control. The Contractor shall perform with his own organization work of a value amounting to not less than 60 percent of the remainder obtained by subtracting from the total original contract value the sum of any item designated herein or in the Special Provisions as Specialty Items. The furnishing and placing of reinforcing steel, when placing is performed by the supplier, will be considered as a Specialty Item for this purpose; however, he shall be designated in the list of subcontractors. The value of the work subcontracted will be based on the contract item bid price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the Contract Unit Price. This will be determined from information submitted by the Contractor, and subject to approval by the Engineer.

Where a portion of the work which has been subcontracted by the Contractor is not being prosecuted in a manner satisfactory to the District, the subcontractor shall be removed immediately on the requisition of the Engineer and shall not again be employed on the work.

6.04 CHARACTER OF WORKMEN

If any subcontractor or person employed by the Contractor shall fail or refuse to carry out the directions of the Engineer or shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be discharged immediately on the requisition of the Engineer, and such person shall not again be employed on this work.

6.05 TEMPORARY SUSPENSION OF THE WORK

The Engineer shall have the authority to suspend the work wholly or in part, for such period as he may deem necessary, due to unsuitable weather, or to such other conditions as are

considered unfavorable for the suitable prosecution of the work, or for such time as he may deem necessary due to the failure on the part of the Contractor to carry out orders given, or to perform any provision of the contract. The Contractor shall immediately comply with the written order of the Engineer to suspend the work wholly or in part. The work shall be resumed when conditions are favorable and methods are corrected, as ordered or approved in writing by the Engineer.

6.06 TIME OF COMPLETION AND DAMAGES

The Contractor shall complete the work called for under the contract in all parts and requirements within the number of working days specified in the Special Provisions.

A working day is hereby defined as any day; except Saturdays, Sundays, and legal holidays and days on which the Contractor is specifically required by the Special Provisions to suspend construction operations; on which the Contractor is not prevented by inclement weather or conditions resulting immediately therefrom adverse to the current controlling operation or operations, as determined by the Engineer, from proceeding with at least 60 percent of the normal labor and equipment force engaged in such operation or operations for at least five hours toward completion of such operation or operations.

The Engineer will furnish the Contractor a weekly statement showing the number of working days charged to the contract for the preceding week, the number of working days specified for completion of the contract, and the number of working days remaining to complete the contract. The Contractor will be allowed one week in which to file a written protest setting forth in what respects said weekly statement is incorrect, otherwise the statement shall be deemed to have been accepted by the Contractor as correct.

The following holidays will be considered as legal holidays: New Year's Day; Martin Luther King Jr.'s Birthday, Lincoln's Birthday; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Columbus Day; Veteran's Day; Thanksgiving Day; Christmas; and such other days as are declared holidays by ordinance passed by the Board of Supervisors of Riverside County.

Contractor acknowledges that failure to perform in strict accordance with the Contract Documents and within the time limit specified in the Special Provisions will cause District to suffer special damages in addition to cost of completion of the work in accordance with the provisions of the Contract Documents. Such special damage could include, but is not limited to, lease and rental cost, additional salaries and overhead, interest during construction, attorney expense, additional engineering, inspection expense, cost of maintaining or constructing alternate facilities and injury to the property of the District or others. The daily cost to the District for inspection and superintendence by the District shall be the amount specified in the Special Provisions. The District may withhold from any money due or that may become due the Contractor under the contract, such amount as the District may elect to offset the damages incurred and any withholding or failure to withhold shall not in any way limit recovery for damages actually incurred.

It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the time specified, the Board of Supervisors shall have the right to extend the time for completion or not, as may seem best to serve the interest of the District, and if it decides to extend the time limit for the completion of the contract, it shall further have the right to charge to the Contractor, his heirs, assigns or sureties and to deduct from the final payment for the work all or any part, as it may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the contract, and which accrue during the period of such extension, except that cost of final surveys and preparation of final estimate shall not be included in such charges.

The Contractor shall not be assessed damages nor the cost of engineering and inspection during any delay in the completion of the work caused by acts of God or of the public enemy, acts of the District, encountering unknown utility facilities, fire, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather or delays of subcontractors due to such causes, provided that the Contractor shall notify the Engineer in writing of the causes of delay within ten (10) days from the beginning of any such delay, and his findings of the facts thereon shall be final and conclusive. Contractor shall not be assessed damages for delay in the completion of the project, when such delay was caused by the failure of the District or the owner of the utility facilities.

The term "severe weather" shall be construed to mean only such weather as is unreasonable or extraordinary and in the opinion of the Engineer, the work could not be prosecuted by the Contractor during the period throughout which such weather prevailed.

6.07 DELAYS AND EXTENSION OF TIME

If delays are caused by unforeseen causes beyond the control of either the Contractor or the District, such as war, strikes, fire, floods, or other action of the elements, such delays will entitle the Contractor to an equivalent extension of time for the completion of the contract, but the Contractor shall not be entitled to damages or additional payments over and above the contract price due to delay caused by any of the above-mentioned causes. Furthermore, if the Contractor suffers any delay caused by the failure of the District to furnish the necessary right of way or materials agreed to be furnished by it, or by failure to supply necessary plans or instructions concerning the work to be done after written request therefor has been made, the Contractor shall be entitled to an extension of time equivalent to the time lost for any of the above-mentioned reasons, but shall not be entitled to any damages for such delay.

6.08 ASSIGNMENT

The contract may be assigned only upon written consent of the District. Such written consent to sublet, assign or otherwise dispose of any portion of the contract, shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract.

6.09 TERMINATION OF CONTRACT

Subject to all applicable provisions of these specifications and/or the contract to be entered into hereunder, the Engineer is hereby empowered to direct the time and rate of delivery of materials at the site of work and to direct the time, rate and sequence of work. If the Contractor fails to begin delivery of material and equipment or to commence work within the

time specified herein, and/or in the contract, or to maintain the rates of delivery of materials, or to execute the work in the manner and at such locations as directed by the Engineer, or fails to maintain a program of work in such a manner as will, in the judgment of the Engineer inure to interests of the District, or, if in the judgment of the Engineer, the Contractor is not carrying out the provisions of the contract in their true intent and meaning, written notice by the Chief Engineer may be served upon him and the Surety on his faithful performance bond demanding a satisfactory compliance with the contract, and with these specifications. If the Contractor and/or his Surety refuses or neglects to comply with such notice within five (5) days after receiving same, or after commencing so to do, fails to continue so to do, or has assigned or sublet the contract without the consent of the District, then the District may exclude him from the premises and take possession thereof, together with all material and equipment thereon, and may complete the work itself, either by force account or by letting the unfinished portion of the work to another Contractor or by a combination of such methods. In any event, the cost of the completion of said work shall be a charge against the Contractor and his Surety and may be deducted from any money due or becoming due from the District, and if the sums due under the contract are insufficient, said Contractor and/or his Surety shall pay to the District within five (5) days after the completion of the work all of such cost in excess of the contract price.

The Surety, in the event that it assumes part of the work, shall take the Contractor's place in this contract in all respects for that part and shall be paid by the District for all work performed by it in accordance with the terms of this contract. If the Surety assumes the entire contract, all monies remaining due the Contractor at the time of his default shall be made payable to the Surety as the work progresses, subject to the terms of the contract.

SECTION VII - PAYMENT

7.01 SCOPE OF PAYMENTS

The Contractor shall accept compensation, as herein provided, in full payment for furnishing all materials, labor, tools, and equipment necessary to the completed work and for performing all work contemplated and embraced under the contract; also for loss or damage arising from the nature of the work, or from the action of the elements, except as hereinbefore provided, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Board of Supervisors; and for all risks of description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work as herein specified; and for completing the work according to the plans and specifications. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

7.01A Measurement and Computation of Quantities - All items of the work to be paid for at a contract price per unit of measurement will be measured by the Engineer in accordance with United States Standard Measures. A ton shall mean 2,000 pounds, avoirdupois. Except as otherwise expressly provided in the specifications, the methods of measurement and computation of quantities of such items will be determined by the Engineer, taking into account the price of the item relative to its quantity and the costs of measurement.

The weights of metalwork, pipe, and other metal parts to be paid for by weight will be determined by the Engineer on the basis of handbook weights, scale weights, or manufacturer's

catalog weights, or in the absence of any of the foregoing, on the basis of estimated weights; provided, that weights of nonmetallic coatings will be excluded.

7.01B Payment at Contract Prices - The contract price for an item of the work shall include full compensation for all costs of that item, including the costs of any work, materials and equipment incidental to the item but not specifically shown or described in the drawings and specifications, subject only to such express limitations as may be stated in the specifications defining the item or prescribing payment therefor.

The contract prices shall include full compensation for all costs of any work, materials, and equipment required by the drawings and specifications at the time of contract award, but not covered by a contract price or otherwise expressly made the subject of direct payment.

7.02 PAYMENT AND COMPENSATION FOR ALTERED QUANTITIES

When alterations in plans or quantities of work are ordered and performed, the Contractor shall accept payment in full at the contract unit price for the actual quantities of work done and no allowance will be made for anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as stipulated in such agreements.

7.03 FORCE ACCOUNT PAYMENT

When extra work is to be paid for on a force account basis, compensation will be determined as follows:

7.03A Work Performed by Contractor - The Contractor will be paid for labor, materials, and equipment rental as hereinafter provided, except where agreement has been reached to pay in accordance with Section 7.03B. Only materials incorporated in the work will be paid for.

To the total computed as provided in Sections 7.03A(1), 7.03A(2) and 7.03A(3) will be added the following percentages:

| | | |
|------------------|---|------------|
| Labor | - | 24 percent |
| Materials | - | 15 percent |
| Equipment Rental | - | 15 percent |

It is understood labor, materials, and equipment may be furnished by the Contractor or by the subcontractor or by others on behalf of the Contractor.

When extra work paid for on a force account basis is performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the District for such work and no additional payment therefor will be made by the District.

7.03A(1) Labor - The Contractor will be paid the cost of labor for the workmen (including foremen when authorized by the Engineer), used in the actual and direct performance of the work. The cost of labor, whether the employer is the Contractor, subcontractor, or other forces, will be the sum of the following:

7.03A(1a) Actual Wages - The actual wages paid will be as published by the Director of Industrial Relations of the State of California for the region where work is performed and that are in effect at the time of award of the contract. The classification of workmen used shall not be in excess of the industry standard for the region where work is performed. Copies of the published labor rates are on file at the District office.

7.03A(1b) Labor Surcharge - To the actual wages as defined in Section 7.03A(1a), will be added a labor surcharge set forth in the Special Provisions, which labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual wages as defined in Section 7.03A(1a) and subsistence and travel allowance as specified in Section 7.03A(1c).

7.03A(1c) Subsistence and travel allowance paid to such workmen as required by collective bargaining agreements.

7.03A(2) Materials - The cost of materials incorporated in the work will be the cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier thereof, except as the following are applicable:

7.03A(2a) If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to the District notwithstanding the fact that such discount may not have been taken.

7.03A(2b) If the materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier as determined by the Engineer. No markup except for actual costs incurred in the handling of such materials will be permitted.

7.03A(2c) If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefor will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or on the current wholesale price for such materials delivered to the job site whichever price is lower.

7.03A(2d) If the cost of such materials is, in the opinion of the Engineer, excessive, then the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site, less any discounts as provided in Section 7.03(2a).

7.03A(2e) If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof, the cost shall then be determined in accordance with Section 7.03A(2d).

The District reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no claims for costs and profit on such materials.

7.03A(3) Equipment Rental - The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the Special Provisions, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor. If it is deemed necessary by the Engineer to use equipment not listed in the Special Provisions, a suitable rental rate for such equipment will be established by the Engineer. The Contractor may furnish any cost data which might assist the Engineer in the establishment of such rental rate.

The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

Operators of rented equipment will be paid for as provided under Section 7.03A(1).

All equipment shall, in the opinion of the Engineer, be in good working condition and suitable for the purpose for which the equipment is to be used.

Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Individual pieces of equipment or tools having a replacement value of \$25.00 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

In computing the rental time of equipment, less than 30 minutes shall be considered ½ hour.

7.03A(3a) Equipment on the Work - The rental time to be paid for equipment on the work shall be the time the equipment is in operation on the extra work being performed, and in addition, shall include the time required to move the equipment to location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the extra work on other than such extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the extra work on other than such extra work.

7.03A(3b) Equipment not on the Work - For the use of equipment moved in on the work and used exclusively for extra work paid for on a force account basis, the Contractor will be paid the rental rates listed in the Special Provisions or as agreed to as provided

in Section 7.03A(3) and for the cost of transporting the equipment to the location of the work and its return to its original location, all in accordance with the following provisions:

- (1) The original location of the equipment to be hauled to the location of the work shall be agreed to by the Engineer in advance.
- (2) The District will pay the costs of loading and unloading such equipment.
- (3) The cost of transporting equipment on low bed trailers shall not exceed the hourly rates charged by established haulers.
- (4) The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.
- (5) The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each day that the equipment is at the site of the extra work, excluding Saturdays, Sundays, and legal holidays unless the extra work is performed on such days, and shall terminate at the end of the day on which the Engineer directs the Contractor to discontinue the use of such equipment. The rental time to be paid per day will be in accordance with the following:

| <u>Hours Equipment is in Operation</u> | <u>Hours to be Paid</u> |
|--|-----------------------------|
| 0..... | 4 |
| 0.5..... | 4.25 |
| 1..... | 4.5 |
| 1.5..... | 4.75 |
| 2..... | 5 |
| 2.5..... | 5.25 |
| 3..... | 5.5 |
| 3.5..... | 5.75 |
| 4..... | 6 |
| 4.5..... | 6.25 |
| 5..... | 6.5 |
| 5.5..... | 6.75 |
| 6..... | 7 |
| 6.5..... | 7.25 |
| 7..... | 7.5 |
| 7.5..... | 7.75 |
| 8..... | 8 |
| Over 8..... | hours in operation |

When hourly rates are listed, less than 30 minutes of operation shall be considered to be 1/2 hour of operation.

When daily rates are listed, payment for 1/2 day will be made if the equipment is not used. If the equipment is used, payment will be made for one day.

The minimum rental time to be paid for the entire rental period on an hourly basis shall not be less than 8 hours or if on a daily basis shall not be less than one day.

(6) Should the Contractor desire the return of the equipment to a location other than its original location, the District will pay the cost of transportation in accordance with the above provisions, provided such payment shall not exceed the cost of moving the equipment to the work.

(7) Payment for transporting, loading and unloading equipment, as above provided, will not be made if the equipment is used on the work in any other way than upon extra work paid for on a force account basis.

7.03B Work Performed by Special Forces or Other Special Services - When the Engineer and the Contractor, by agreement, determine that a special service or an item of extra work cannot be performed by the forces of the Contractor or those of any of his subcontractors, such service or extra work item may be performed by a specialist. Invoices for such service or item of extra work on the basis of the current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization. In those instances wherein a Contractor is required to perform extra work necessitating a fabrication or machining process in a fabrication or machine shop facility away from the job site, the charges for that portion of the extra work performed in such facility may, by agreement, be accepted as a specialist billing.

To the specialist invoice price, less a credit to the District for any cash or trade discount offered or available, whether or not such discount may have been taken, will be added 15 percent in lieu of the percentages provided in Section 7.03A.

7.03C Records - The Contractor shall maintain his records in such a manner as to provide a clear distinction between the direct costs of extra work paid for on a force account basis and the costs of other operations.

The Contractor shall furnish the Engineer report sheets in duplicate of each day's extra work paid for on a force account basis no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Section 7.03B. The daily report sheets shall provide names or identifications and classifications of workmen, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment, and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices. Such invoices shall be submitted with the daily report sheets, or if not available, they shall be submitted with subsequent daily report sheets. Should said vendor's invoices not be submitted within 15 days after acceptance of the work, the District reserves the right to establish the cost of such materials at the lowest current wholesale prices at which said materials are available in the quantities concerned delivered to the location of the work, less any discounts provided in Section 7.03A(2a).

Said daily report sheets shall be signed by the Contractor or his authorized agent.

The Engineer will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustments, and compile the costs of work paid for on a force account basis on daily extra work report forms furnished by the District. When these daily extra work reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit.

The Contractor's cost records pertaining to work paid for on a force account basis shall be open to inspection or audit by representatives of the District, during the life of the contract and for a period of not less than 18 months after the date of acceptance thereof, and the Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor expressly guarantees that the cost records of such other forces shall be open to inspection and audit by representatives of the District on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than 60 days after the acceptance date of the contract, the Contractor will be given a reasonable notice of the time when such audit is to begin.

7.03D - Payment as provided above in Sections 7.03A and 7.03B shall constitute full compensation to the Contractor for performance of work paid for on a force account basis and no additional compensation will be allowed therefor.

7.04 ACCEPTANCE

The work shall be inspected for acceptance by the Engineer promptly upon receipt of notice in writing from the Contractor that the work is ready for such inspection.

The structures will not be finally accepted until the completion of the entire work under the contract.

7.05 DEDUCTIONS FROM PAYMENTS

The Riverside County Flood Control and Water Conservation District, by and through the Board of Supervisors or other appropriate District officer or officers, may at its option and at any time retain out of any amounts due the Contractor sums sufficient to cover any unpaid claims, provided that sworn statements of said claims shall have been filed in the office of the District or in the office of any other District officer or officers having jurisdiction thereover.

7.06 PARTIAL PAYMENTS

On or about the last day of each month, the Engineer shall make an estimate in writing of the total amount of work done by the Contractor to the time of such estimate and the value thereof. The District shall retain 5 percent (5%) of such estimated value of the work done as part security for the fulfillment of the contract by the Contractor. At no time shall the amount retained by the District be less than 5 percent (5%) of the total value of the work completed at the time such payments are made.

After deducting all previous payments and all sums to be kept or retained under the provisions of the contract, the District shall make monthly progress payments to the Contractor.

No such estimate or payment shall be required to be made when, in the judgment of the Chief Engineer, the work is not proceeding in accordance with the provisions of the contract.

In accordance with Public Contract Code Section 22300 and other applicable law, the Contractor may substitute securities for any monies withheld to ensure performance under the contract. Such substitution shall be made only upon a separate agreement between the District and the Contractor which contains terms and conditions in compliance with all laws applicable to monies withheld under the contract.

7.07 DELAYED PAYMENTS

All the monies due the Contractor under the contract will be paid by demand on the Treasurer of the District, prepared and approved as required by law, and it is understood that any delay in the preparation, approval and payment of these demands will not constitute a breach of contract on the part of the District.

7.08 FINAL PAYMENT

The Engineer, after the completion of the contract, shall make a final estimate in writing to the Board of Supervisors of the amount of work done thereunder, and the value of such work, and the District shall pay the entire sum so found to be due after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract. All prior partial estimates and payment shall be subject to correction in the final estimate and payment. The final payment shall not be due and payable until the expiration of forty-five (45) days from the date of acceptance of the work by the Board of Supervisors.

It is mutually agreed between the parties to the contract that no certificate given or payments made under the contract, except the final payment, shall be conclusive evidence of the performance of the contract, either wholly or in part against any claim of the party of the first part, and no payment shall be construed to be an acceptance of any defective work or improper materials.

And the Contractor further agrees that the payment of the final amount due under the contract, and the adjustment and payment for any work done in accordance with any alterations of the same, shall release the Riverside County Flood Control and Water Conservation District, the Board of Supervisors, and the Engineer from any and all claims or liability on account of work performed under the contract or any alteration thereof.

7.09 CLAIMS RESOLUTION

In accordance with Public Contract Code Section 20104 - 20104.6 and other applicable law, public works claims of \$375,000 or less which arise between the Contractor and the District shall be resolved following the statutory procedure unless the District has elected to resolve the dispute pursuant to Public Contract Code § 10240 et seq.

1. All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the claimant for

(1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the claimant and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled, or (3) an amount the payment of which is disputed by the District.

- (a) Claims under \$50,000. The District shall respond in writing to the claim within 45 days of receipt of the claim, or, the District may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the District may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the District and the claimant. The District's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the claimant to produce the additional information, whichever is greater.
- (b) Claims over \$50,000 but less than or equal to \$375,000. The District shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses or claims the District may have against the claimant. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the District and the claimant. The District's response shall be submitted within 30 days after receipt of the further documents, or within the same period of time taken by the claimant to produce the additional information or documents, whichever is greater.

2. If the claimant disputes the District's response, or if the District fails to respond within the statutory time period, the claimant may so notify the District within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and confer for settlement. Upon such demand, the District shall schedule a meet and confer conference within 30 days.

3. If following the meet and confer conference, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Government Code § 900 et seq. and Government Code § 910 et seq. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the claimant submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.

4. If a civil action is filed to resolve any claim, the provisions of Public Contract Code § 20104.4 shall be followed, providing for nonbinding mediation and judicial arbitration.

SECTION VIII - GENERAL

8.01 COOPERATION BETWEEN CONTRACTORS

The Contractor shall be required to cooperate fully with all utility and public agency representatives engaged in construction, relocation, altering or otherwise rearranging any facilities interfering with the progress of the work.

Full compensation for any delay or inconvenience to the Contractor's operation due to such operations as described above shall be considered included in the unit price paid for other items of work and no additional allowance will be made therefor.

8.02 INSURANCE - HOLD HARMLESS

Contractor shall not commence work under this contract until he has obtained the insurance required hereunder and satisfactory proof of said insurance has been submitted to District and has been approved as to form by Riverside County Counsel.

Compensation Insurance - Contractor shall procure and maintain during the life of the contract Workers' Compensation Insurance as required by the State of California. Contractor shall further require each of its subcontractors to procure Workers' Compensation Insurance as required by the State while working on the project.

Liability Insurance - Contractor shall take out and maintain during the course of the work combined single limit liability insurance covering bodily injury and property damage insurance and blanket contractual coverage as to the work and obligations covered hereunder in an amount not less than \$2,000,000, or the equivalent thereof. Said insurance must contain an endorsement that District, County of Riverside, and any municipal corporation in which the work is to be accomplished, are named as an additional insured as respects the work covered hereunder. Said insurance must not contain, as respects the work covered hereunder, any exclusions as to bodily injury or death or property damage arising out of blasting, explosion, or underground damage to wire, pipes, conduits, mains, sewers, tank tunnels or any similar property, i.e., the so-called "x c u" exclusions. The insurance certificate evidencing such insurance must affirmatively state that the insurance carrier(s) will give Owner thirty (30) days written notice prior to cancellation of the insurance or a reduction in coverage; must state that the "x c u" exclusions are waived or do not exist in the policy(s); and that District, County of Riverside, and any municipal corporation in which the work is to be accomplished, are named as an additional insured as respects the work covered hereunder.

In the alternate to naming Owner and County of Riverside, and any municipal corporation in which the work is to be accomplished, as additional insured, Contractor may take out and maintain during the course of the work and until acceptance by Owner, Owner's Protective Liability Insurance amount not less than \$2,000,000 covering District, County of Riverside, and any municipal corporation in which the work is to be accomplished.

The cost of this insurance shall be included in the prices bid for the various items of work and no additional compensation will be made therefor.

Hold Harmless - Contractor shall hold District, County of Riverside and any municipal corporation in which the work is to be accomplished, together with the officers, agents and employees of each, free and harmless from any liability whatsoever, including wrongful death, based or asserted upon any act or omission of Contractor, its officers, agents, employees or subcontractors, relating to or in any way connected with or arising from the accomplishment of the work, whether or not in furtherance of the work; and Contractor agrees to protect and defend, including all attorney fees and other expenses, each of the foregoing bodies and persons in any legal action based or asserted upon any such acts or omissions.

Obligations - The obligations assumed by Contractor cover all obligations set forth in this Subsection and elsewhere in the Contract Documents, such as Subsections 5.01, 5.02, 5.05, 5.06, 5.08, 5.09, 5.10, 10.01, and 10.02.

8.03 PUBLIC UTILITIES

The locations of all pipelines, power lines, communication lines and other utility components known to District to exist within the limits of the work, are indicated on the drawings and may be the subject of a specific Special Provision(s). Size, location and characteristics of such utilities is based upon information made available to District - primarily from the owner of the utility in question. The exactness of such information is not guaranteed but may be assumed to have been accomplished with reasonable accuracy.

In addition to the drawings and any such provision regarding utilities, Contractor is under a duty to take into account the location of service laterals or other appurtenances which can be inferred from the presence of facilities such as buildings, meters and junction boxes in or about the limits of the work.

Unless otherwise directed by the Contract Documents, all existing utilities - where shown or described or not - shall be left in place and Contractor must conduct its operations so that such utilities are protected from damage at all times during the course of the work and the work must be accomplished so as to give such utilities proper protection and support upon completion of the work by Contractor.

If during the course of the work, Contractor discovers underground utility components not indicated in the drawings, the Special Provisions or elsewhere in the Contract Documents, Contractor must immediately notify, in writing, the Engineer and the utility company (public or private) involved, stating with exactness the condition found.

When Contractor encounters a utility not shown or described in the Contract Documents, Contractor shall cease all work which would disturb such utility and its support until given specific instructions as to how to proceed regarding such utility by Engineer. All work done by Contractor to protect existing utilities shown or described in the Contract Documents, or which can be reasonably inferred from the presence of other visible facilities, is at Contractor's expense, the cost of which is deemed included in Contractor's Proposal to do the work.

Contractor's cost of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating utility components and facilities not indicated in the drawings, specifications or elsewhere in the Contract Documents with reasonable accuracy, shall be paid Contractor as Extra Work as provided in Subsection 2.07 and Subsection 7.03 of the General Provisions. Compensation for idle time of equipment shall be paid as provided in Section 8-1.09, "Right of Way Delays", of the State Standard Specifications. No surcharge rates for equipment will be applied for idled equipment.

District may direct the Contractor to do such repair or relocation work as required. When such repair or relocation work is not elsewhere provided for in these Contract Documents, or reasonably inferred therefrom, a requirement of District that Contractor perform such work shall be compensated for as Extra Work pursuant to Subsections 2.07 and 7.03 of these General Provisions.

Contractor shall not be assessed liquidated damages for delay in completion of the project, if such delay is caused by failure of District, or the owner of the utility in question, to provide for removal or relocation of the utility involved.

8.04 PROTECTION OF EXISTING STREET FACILITIES

The Contractor shall be responsible for the protection of existing signs, fences, concrete curbs, gutters and other facilities which may be encountered. The replacement or repair of any facilities which the District deems necessary as a result of the Contractor's operations shall be done by the Contractor at his own expense and to the satisfaction of the Engineer.

Excavation within the street right of way shall be conducted in a manner to cause the least interruption to traffic. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways. Hydrants under pressure, valve pipe covers, valve boxes, curb stop boxes, fire or police call boxes, or other utility controls shall be left unobstructed and accessible during construction.

8.05 DIVERSION AND CONTROL OF WATER

Unless otherwise provided in the Proposal, no separate payment will be made for diversion and control of surface or groundwater. All costs incidental to maintaining dry working areas shall be included in the unit prices paid for other items of work in the schedule.

8.06 DUST ABATEMENT

During the performance of all work included in the contract, the Contractor shall take the necessary precautions to save the District free and harmless from any loss or damage resulting from his operations that raise or produce dust in such amounts that will be objectionable, and/or cause damage to adjacent property or property owners.

The Contractor will be required to have a positive and continuous method of dust control which is satisfactory to the Engineer. The methods to be used for controlling dust in the

construction area and along haul roads shall be approved by the Engineer prior to starting any of the work included in the contract. All costs incidental to dust control shall be included in the unit prices paid for other items of work in the schedule.

8.07 PROJECT SIGNS

The Contractor shall erect project signs at the locations designated by the Engineer.

No separate payment will be made for erecting the project signs and all costs in connection therewith will be considered a subsidiary obligation of the Contractor.

8.08 EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK

The bidder shall examine carefully the site of the work contemplated, the plans and specifications, and the proposal and contract forms therefor. The submission of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the proposal, plans, specifications, and the contract.

Where the District has made investigations of subsurface conditions in areas where work is to be performed under the contract, or in other areas, some of which may constitute possible local material sources, such investigations are made only for the purpose of study and design. Where such investigations have been made, bidders or Contractors may, upon request, inspect the records of the District as to such investigations subject to and upon the conditions hereinafter set forth. Such inspection of records may be made at the office of the District.

The records of such investigations are not a part of the contract and are shown solely for the convenience of the bidder or Contractor. It is expressly understood and agreed that the District assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the District in its use thereof and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unlooked-for developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

When a log of test borings showing a record of the data obtained by the District's investigation or subsurface conditions is included with the contract plans, it is expressly understood and agreed that said log of test borings does not constitute a part of the contract, represents only the opinion of the District as to the character of the materials encountered by it in its test borings, is included in the plans only for the convenience of bidders and its use is subject to all of the conditions and limitations set forth in this Section 8.08.

No information derived from such inspection of records of investigations or compilation thereof made by the District or from the Engineer, or his assistants, will in any way relieve the bidder or Contractor from any risk or from properly fulfilling the terms of the contract.

SECTION IX - WATERING

9.01 DESCRIPTION

This work shall consist of developing a water supply for all water required for the work. The application of the water shall be under the control of the Engineer at all times and shall be applied in the amounts and at the locations approved by the Engineer.

At least one mobile unit of at least 1,000-gallon capacity for applying water shall be available on the project at all times.

Water for compacting embankment material and for laying dust shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.

No separate payment or additional allowances will be made for this work and all costs in connection therewith will be considered as included in other items in the schedule.

SECTION X - PUBLIC CONVENIENCE, TRAFFIC CONTROL AND DETOURS

10.01 GENERAL

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public and he shall have under construction no greater length or amount of work than he can prosecute properly with due regard to the rights of the public.

Unless otherwise provided in the Special Provisions, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately at the Contractor's expense.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Convenient access to driveways, houses and buildings along the line of work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition.

10.02 SIGNS

It shall be the responsibility of the Contractor to provide and maintain all lights, barricades and signs, both on and off the site of work, as required by the Engineer, and all such devices shall be of a type approved by him.

If, in any case, the Engineer finds it necessary to replace, add to or erect said barricades, signs, or lights, when the Contractor fails to do so when informed, the Contractor shall be billed for all costs thereof including a daily rental fee for signs.

No separate payment, unless otherwise provided for under the Special Provisions, will be made for traffic control and detour signing and all costs incidental to these items shall be included in the unit prices paid for other items of work.

10.03 MATERIALS STORAGE

Storing or stockpiling of excavated material, imported backfill material or construction materials on any street or highway will not be permitted except as approved in writing by the Engineer.

SPECIAL PROVISIONS
AND
DETAILED SPECIFICATIONS

SPECIAL PROVISIONS

SECTION 1 - GENERAL

1.1 Drawings and Specifications - These documents are for the construction of the **Eagle Canyon Dam and Debris Basin** Project (District Project No. 6-0-00190), located in the Palm Springs/Cathedral City area of Riverside County, California. The owner of the project is the Riverside County Flood Control and Water Conservation District (District). This work shall conform to the contract drawings indexed on the cover sheet of the drawings included herewith. The dam is under the jurisdiction of the State of California Department of Water Resources, Division of Safety of Dams (DSOD) and is DSOD Dam No. 1003-17.

References made in these Special Provisions or Detailed Specifications to the "Standard Specifications" refer to the "Standard Specifications for Public Works Construction", current edition, including supplements, also known as the "Greenbook". References to Standard Specifications have been used to specify only Galvanizing Procedure for Metals. References to Standard Specification have been minimized to make these Special Provisions a standalone set of specifications, to the extent possible for this project and to avoid discrepancies or confusion during the construction. All referenced drawings (District Standard Drawings) will be presented in the construction plan for the project or at the end of Appendices in this document.

Standard Specifications of the American Society for Testing and Materials shall be designated by ASTM and the appropriate number of the standard. The project plans have been designed in U.S. units.

In the event that discrepancies are encountered, the option that provides the method, item or material with the greatest strength or utility shall be chosen, as directed by the Engineer.

The Contractor should be aware of DSOD's regulatory function during the construction of this project. Representatives from DSOD will periodically inspect the work in progress during construction, including the materials being incorporated into the works, as well as test results and documentation associated with the project. Contractor shall allow DSOD representatives access to all locations within the project boundaries. All communications with DSOD pertaining to this Project shall be coordinated through the Engineer. The Contractor's attention is directed to Sections 14.2, 14.12, 14.13, 14.14, 14.15, 14.16, 14.17, 14.18, 14.19, 14.20, 14.22, 16.6.18.1, 16.6.23 and 17.2 of the Special Provisions in which DSOD inspection/review is required. Contractor shall notify the Engineer a minimum of 72 hours prior to scheduling inspection for those items that require DSOD inspection/review. Engineer and DSOD will inspect the project during construction, including but not limited to the following: the preparation of the foundation and abutments, placement of earth fill, preparation of concrete surfaces to receive concrete, placement of steel reinforcement and concrete placement.

The Contractor should use skilled and experienced workmen for this project.

In case of any conflict between the drawings and the specifications, the drawings shall govern; in case of conflict between the referenced specifications and these specifications, the latter shall govern.

1.2 Temporary Construction Easement (TCE) – The Contractor's attention is directed to Appendix "J" of these Special Provisions which shows the limits of the TCE. The palm trees within the TCE shall be protected in place.

SECTION 2 - TIME OF COMPLETION, DAMAGES AND LEGAL HOLIDAYS

2.1 General - The Contractor shall begin work within ten (10) calendar days after the date of receipt of Notice to Proceed from the Engineer and shall diligently prosecute the same to completion before the expiration of

ONE HUNDRED EIGHTY (180) WORKING DAYS

from the date of receipt of Notice to Proceed.

2.2 Damages - The Contractor and the District expressly agree that the cost to the District for inspection and superintendence of the work for this contract is \$2,000.00 per working day.

2.3 Legal Holidays - The Contractor will not be permitted to work on Legal Holidays (Reference Sections 6.02 and 6.06 of the General Provisions), except in cases of emergency as directed by the Engineer.

SECTION 3 - FORCE ACCOUNT PAYMENT

3.1 Labor Surcharge - Attention is directed to the provisions of Section VII, Article 7.03A (1b) of the General Provisions. The labor surcharge percentage to be applied to the actual wages paid as defined in Paragraph 7.03A (1a) will be twenty-four percent (24%).

3.2 Equipment Rental - Attention is directed to the provisions of Section VII, Article 7.03A (3) of the General Provisions. The equipment rental rates to be applied will be the rates published by the California Department of Transportation and in effect at the time of the award of the contract. A copy of said Equipment Rental Rates is on file at the District Office.

SECTION 4 - PROTECTION OF EXISTING UTILITIES

4.1 General - All existing underground utility lines, power poles and overhead wiring shall be protected in place at all times, except as noted otherwise on the plans. Any damage to utilities caused by the Contractor's operation shall be repaired or replaced at the Contractor's expense.

The Contractor shall contact the utility companies and local municipalities servicing the project area to review as-built utility drawings and determine appropriate means of protecting utilities.

At the discretion of the Engineer, the Contractor may be required to verify, by potholing, the location of potentially affected utilities. Potholing shall be completed prior to any excavation within 500 feet of the utility.

4.2 Cooperation with Utilities - The Contractor shall notify the following agencies a minimum of 48 hours in advance of start of any street work and inform them of the proposed construction schedule and provide any additional pertinent information they may request:

| | |
|---|--------------|
| City of Cathedral City (Bill Simon) | 760.770.0340 |
| City of Palm Springs (David Barakian) | 760.323.8253 |
| Desert Water Agency (Steve Johnson) | 760.323.4971 |
| Southern California Edison (Arlan E. Averyt) | 714.796.9920 |
| Southern California Gas Company (Bruce Waddell) | 909.335.7507 |
| Time Warner Cable (Don Knox) | 760.674.5472 |
| Verizon (Larry Moore) | 760.778.3603 |

Should any utility relocation result in delays to the Contractor's work schedule, the Contractor shall be entitled only to an equivalent extension of time for the completion of the contract, and shall not be entitled to damages due to downtime and idled equipment or additional payment over and above the agreed upon contract unit prices.

SECTION 5 - PROJECT SITE MAINTENANCE

5.1 General - No separate payment will be paid for Project Site Maintenance as discussed in this Section. Contractor shall include all associated costs for Project Site Maintenance in the appropriate sections of these Special Provisions.

Before final acceptance of the work, the Contractor shall clean the work and the site of the work of all falsework, temporary structures, other construction materials and equipment, excess materials and rubbish, and shall leave the work and the site in a neat and presentable condition. Such final cleanup work shall be performed within the time specified for completion of all of the work.

Through all phases of construction, including suspension of work and until the final acceptance of the project, the Contractor shall comply with the following:

5.2 Cleanup and Dust Control - Contractor shall keep the site clean and free from rubbish and debris. Stockpiles of rubbish and debris will not be allowed. Rubbish and debris collected at the work site shall only be stored in enclosed containers prior to disposal.

Contractor shall implement and maintain Best Management Practices (BMPs) relevant to the work. The Contractor shall be responsible for BMP implementation and maintenance throughout the project including any temporary suspension of work.

Contractor shall not store construction materials, equipment and excavated material in public streets, roads or highways. If such storage is required for a short term, the Contractor should first obtain permission and site conditions from the Engineer.

Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day for the purpose of keeping paved areas acceptably clean until the end of construction.

Contractor shall take care to prevent spillage on haul routes, and shall remove any such spillage and clean that area immediately.

Contractor shall remove forms and form lumber from the site as soon as practicable after stripping.

Engineer's cleanup orders shall be promptly executed by the Contractor. Failure to abide by the orders shall result in an order to suspend work until the conditions are corrected, and no additional compensation will be allowed as a result of the suspension.

Before the final inspection by the Engineer for acceptance, Contractor shall remove unused materials, equipment, and rubbish so as to present a satisfactorily clean and neat appearance.

5.3 Air Pollution Control - Contractor shall not discharge dust, smoke or any other air contaminants into the atmosphere in such quantity that will violate any local, State and Federal regulations of controlling agencies.

Contractor shall abate the dust nuisance by cleaning, sweeping and spraying water, or other means as necessary. The use of water shall conform to Section 5.7, Water Pollution Control. Further requirements and payment related to dust control are discussed in Section 27.

5.4 Vermin Control - Structures entirely constructed under the Contract shall be free of rodents, insects, vermin, and pests at the time of acceptance.

All necessary extermination work shall be performed by a licensed exterminator in accordance with requirements of governing agencies.

Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.

5.5 Sanitation - Contractor shall provide and maintain temporary enclosed toilets for use by all employees engaged in the work throughout the duration of the Contract. These facilities shall be maintained in a neat and sanitary condition and shall comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwelling and camps.

Sewage shall not be permitted to flow in the project area or be covered by backfill.

5.6 Temporary Light, Power and Water - Contractor shall furnish, install, maintain, and remove all temporary light, power and water at his own expense. These include wiring, lamps, piping and other necessary equipment for the work.

Contractor shall not draw water from any fire hydrant (except to extinguish a fire), without obtaining an appropriate permit from the appropriate agency. Such permit shall be made available at the Contractor's site office at all times.

5.7 Water Pollution Control - Contractor shall conform to all applicable local, State and Federal regulations and laws pertaining to water pollution control.

Contractor shall exercise every reasonable precaution to protect storm drains, channels and bodies of water from pollution by constructing necessary facilities that will prevent, control, and abate water pollution.

Contractor shall not discharge sediments to a storm drain or receiving waters, and shall use appropriate BMPs to contain such sediments on the work site.

Contractor shall refer to Section 29 for further information.

5.8 Drainage Control - Contractor shall maintain drainage within and through the work area.

Contractor shall use temporary barriers and diversion facilities using sandbags, asphaltic concrete or other acceptable materials when necessary and remove them from the site as soon as their use is no longer necessary.

SECTION 6 - SPECIAL REQUIREMENTS

6.1 National Pollutant Discharge Elimination System (NPDES) – The Contractor shall comply with the requirements of Board Order No. R7-2008-0001 (NPDES No. CAS617002), NPDES Area-Wide Municipal Stormwater Permit, hereafter referred to in this Section as the "Permit", issued by the California Regional Water Quality Control Board (CRWQCB) – Colorado River Basin Region. This Permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. The Contractor shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Section 29 "Stormwater and Non-Stormwater Pollution Control" of the Detailed Specifications.

The Contractor's attention is directed to: 1) Section 29.2 "General Requirements" which allows the Engineer to withhold progress payments if the Contractor fails to fully implement Section 29 "Stormwater and Non-Stormwater Pollution Control" or is deemed to be in non-compliance with the provisions of the Permit; 2) Section 29.3 "Stormwater Pollution Prevention Plan Preparation and Approval" which requires that a SWPPP be prepared and approved prior to the Pre-Construction meeting; and 3) Section 29.7 "SWPPP Implementation" which allows the Engineer to suspend construction operations if the Contractor fails to implement the approved SWPPP and any amendments thereto.

6.2 Heavy Equipment Working Hours - Heavy construction equipment will not be allowed to commence construction work until 7:00 a.m. each normal working day, unless otherwise approved by the Engineer.

All Contractor's equipment shall be well maintained and in proper tune per manufacturer's specification.

6.3 Encroachment Permits -

- (a) Riverside County Transportation Department - The Contractor may be required to obtain a truck/haul/route permit for importing or exporting materials on County roads. The Contractor is required to pay any fee for the truck/haul route permit. A copy of the permit shall be provided to the Engineer prior to commencement of work.
- (b) City of Palm Springs - The Contractor is required to obtain a truck/haul route permit from the City of Palm Springs for importing or exporting materials on City roads. The City of Palm Springs will not require the Contractor to pay a fee for the permit. A copy of the permit shall be provided to the Engineer prior to commencement of work.
- (c) City of Cathedral City - The Contractor is required to obtain a truck/haul route permit from the City of Cathedral City for importing or exporting materials on City roads. The City of Cathedral City will not require the Contractor to pay a fee for the permit. A copy of the permit shall be provided to the Engineer prior to commencement of work.

6.4 Toxic Material Disposal - Toxic materials including oil, fuel oil, gasoline, coolant, fluid filters and other contaminants shall not be discharged within the project site. All such materials shall be transported offsite and disposed of at a City or County approved facility.

6.5 Survey Crew - The Contractor shall notify the Engineer in writing at least 48 hours prior to new construction staking.

Survey Crews will be provided by the District and will be available Monday through Thursday from 7:30 a.m. to 3:00 p.m., with a half-hour off for lunch. If the Contractor requires the Survey Crew to work beyond the specified time mentioned above, it shall be considered as overtime and shall be paid by the Contractor at 1.5 times the Survey Crew's hourly rates.

6.6 Survey Monuments - The Contractor shall salvage and give detailed information to the District about all survey monuments and wells removed during construction. The District will reset monuments after construction.

6.7 Job Trailer Site - The Contractor is required to provide a site and install a trailer or office for District personnel. This trailer or office shall be in good condition and located in a place acceptable to the District. The trailer or office shall be for the sole use of the District and shall

not be used by the Contractor for any activity, including storage. The Contractor shall make provisions for the privacy and security of the office, and provide air conditioning, drinking water, telephone and electrical service. The trailer or office shall be furnished and of sufficient size to accommodate two resident District personnel and have a conference area to accommodate ten (10) people. The Contractor shall pay the monthly billings for these services. The trailer shall be fully operational and available to District personnel on the first day of work. Should the trailer or office not be available and in working condition, it is agreed by both parties at the time of entering this contract that damages in the amount of \$3,000 per month shall be assessed. It is agreed that this amount may be prorated and shall be deducted from the first contract payment and any successive payments covering any period that the facilities are unavailable.

6.8 Pipe Order Notification - The Contractor shall submit to the District the invoice from the pipe company stating, (1) pipe order date, (2) pipe quantity, and (3) estimated date of pipe delivery, prior to the preconstruction meeting.

6.9 Project Signs - Supplementing Section 8.07 of the General Provisions, the Contractor shall be required to provide two new project signs. The Contractor shall install and maintain the project signs at locations specified by the Engineer, with painting and lettering as shown in Appendix "B" of these Special Provisions. The signs shall be installed as directed by the Engineer within five (5) days after District issuance of the Notice to Proceed. Upon completion of construction, the signs shall be removed.

6.10 Confined Space Compliance - The Contractor shall comply with all Cal/OSHA safety regulations including regulations concerning confined space and for maintaining a safe working environment for Contractor and District employees on the site. The Contractor shall develop and maintain a confined space procedure specific to this contract that complies with the requirements contained in California Code of Regulations, Title 8, Section 5158, Other Confined Space Operations and the District Confined Space Procedure, SOM-18. A copy of SOM-18 can be obtained from the District office, 1995 Market Street, Riverside upon request.

Within five (5) days after the award of the contract, the Contractor shall submit three (3) copies of the procedure to the Engineer for review and approval. The Contractor shall allow five (5) working days for the Engineer to review the procedure. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the procedure within three (3) working days of receipt of the Engineer's comments and shall allow four (4) working days for the Engineer to review the revisions. The Contractor must submit three (3) copies of the approved procedure to the Engineer prior to the pre-construction meeting.

The procedure shall provide for recording of data to develop a history of acceptable atmosphere within the confined space. That history will include:

1. Daily calibration of a direct reading confined space meter by trained personnel.
2. Daily monitoring and recording of the confined space atmosphere with a calibrated direct reading confined space meter.

3. Records of Items 1 and 2 shall be maintained onsite and copies given to the Engineer.
4. The records shall indicate if readings are of natural or mechanically enhanced ventilation.

In addition, the procedure shall include daily tours of the job site with the Engineer to ensure inlets to the confined space are free of obstruction or substances that might affect the atmosphere of the confined space.

The Contractor will be required to keep a direct reading confined space meter onsite for the duration of the contract. The meter shall be calibrated daily and shall be made available for the Engineer's use upon request.

6.11 Construction Tolerances – Unless specified otherwise on the drawings, variation in alignment, grade and dimensions of the structures and structural components from the established alignment, grade and dimensions shown on the drawings shall be within the tolerances specified in the following:

| | | |
|--|--|---|
| Departure from established alignment | | 2 inches on tangents 4 inches on curves |
| Departure from established profile grade | Channel bottoms, channel sideslopes in cut and fill, levee and access road sideslopes in cut | Zero <u>above</u> and 3 inches <u>below</u> the specified grade |
| | Top surfaces of levees and access roads in both cut and fill, levee and access road sideslopes in fill | Zero <u>below</u> and 3 inches <u>above</u> the specified grade |

Regardless of the construction tolerances specified, the excavation and grading shall be performed so that the finished surfaces are in uniform planes with no abrupt breaks in the surface.

| | | |
|---|----------------------|---|
| Departure from established alignment | | 2 inches on tangents 4 inches on curves |
| Departure from established profile grade | | 1 inch |
| Variation in thickness of lining, sideslopes and invert | | 5 percent of specified thickness provided average thickness is maintained |
| Variation from specified width of section at any height | | 0.0025 times specified width W plus 1 inch. $0.0025W + 1$ inch |
| Variation from specified height of lining | | 0.005 times specified height H plus 1 inch. $0.005H + 1$ inch |
| Variation in surfaces (gradual) | Invert Sideslopes | $\frac{1}{4}$ inch in 10 feet $\frac{1}{2}$ inch in 10 feet |
| Variation in surfaces (abrupt) | | $\frac{1}{4}$ inch |

Gradual Variation tolerance shall be measured by placing a 10-foot straightedge anywhere on the finished concrete structure within 72 hours after concrete placement. The gap at any point between the straightedge and the concrete shall not exceed the specified dimensions.

Tolerances for concrete construction are included in Section 16.6.16 within Concrete Construction. That information is also presented below for ease of reference.

- A. Tolerances are defined as allowable variations from specified lines, grades, and dimensions and as the allowable magnitude of the surface irregularities. Allowable variations from specified lines, grades, and dimensions are the recommended permissible variations in ACI 117, "Standard Tolerances for Concrete Construction and Materials".
- B. Allowable magnitudes for concrete surface irregularities are given in Section 16.6.19, Finishes and Finishing, herein.
- C. The intent of this Section is to establish tolerances that are consistent with modern construction practice, yet are governed by the effect that permissible variations may have upon a structure. The Engineer reserves the right to diminish the tolerances set forth herein if such tolerances impair the structural action, operational function, or architectural appearance of a structure or portion thereof.
- D. The Contractor shall be responsible for finishing the concrete and for setting and maintaining concrete forms to ensure that the completed work will be within the tolerances specified. Concrete work that exceeds the tolerance limits specified shall be remedied as approved by the Engineer.

6.12 Access to the Project Site - The Contractor shall access the project site through the easement from Perez Road to the proposed outlet channel location. The Contractor shall clean up or repair, at his expense, Perez Road and nearby streets for any damages incurred by his operation.

6.13 Surplus Excavated Material - Any stockpiling, grading or disposal of material outside of the project limits is not covered under the District's permits and is the sole responsibility of the Contractor. Regulatory permits that may be required include, but are not limited to, Federal Clean Water Act (Sections 401 and 404), California Fish and Game Code (Section 1602), County/State Environmental Protection Act and Federal/State Endangered Species Acts. All costs to obtain these Regulatory Permits shall be borne by the Contractor.

6.14 Liability Insurance - The Contractor's attention is directed to Section 8.02, Insurance Hold Harmless, of the General Provisions. The cities of Palm Springs and Cathedral City shall also be named as additional insured with the liability insurance coverage required to be maintained by the Contractor.

- 6.15 Fish and Game 1602 Agreement - Please see Section 30.
- 6.16 California Regional Water Quality Control Board 401 Certification - Please see Section 30.
- 6.17 Corps of Engineers Section 404 Permit - Please see Section 30.
- 6.18 Tree Removal - The Contractor shall remove all trees and large shrubs required for construction between September 16 and the end of February to avoid the bird nesting season. If any trees or large shrubs must be removed during the nesting season, the District's Environmental/Regulatory Section (ERS) will perform a survey to ensure there is no nesting within thirty (30) days prior to the start of removing the trees or shrubs. If active nests are detected, a temporary buffer area of 300 feet around each nest will be required until juvenile birds have fledged. The Contractor will be required to schedule his work accordingly.
- 6.19 Coordination with Other Contractors - The Contractor is hereby notified that other District contractors will be performing work within the project site.

The Contractor shall coordinate and allow access to the District's other contractors. The Contractor may need to provide some minor grading and maintenance for their access.

6.20 Mandatory Pre-Bid Site Inspection - The Contractor's attention is directed to Section 8.08 of the General Provisions. To facilitate the Contractor's site examination, the District has scheduled a Mandatory Site Inspection Tour on Tuesday, December 18, 2012. The tour will begin at 10:00 a.m. at the intersection of Via Allegro and Canyon Plaza Drive, in the city of Cathedral City, CA 92234. A record of attendees will be maintained by the District. It is the responsibility of the Contractor to ensure that attendance is noted by the District. Any bid submitted by any Contractor who was not in attendance at the Mandatory Pre-Bid Site Inspection Tour will be considered non-responsive and disqualified.

SECTION 7 - SOILS REPORT

The Contractor's attention is directed to Article 8.08 of the General Provisions. The logs of the borings and test pit logs are included for the convenience of the bidders, in conformance with Section 8.08 of the General Provisions, as Appendix "C" of these specifications. The soils reports are on file in the District office, 1995 Market Street, Riverside and are available for review upon request. A pdf of the soils report, prepared by Genterra Consultants, Inc., dated July 12, 2006 is also available online at the following link: http://rcflood.org/Documents/Eagle_Canyon_Dam/Eagle_Canyon_Dam_and_Debris_basin_final_Geotechnical_Report.pdf.

SECTION 8 - NOT USED

SECTION 9 - PAYMENT

The contract prices shall include full compensation for all costs incurred under these Special Provisions and Detailed Specifications.

DETAILED SPECIFICATIONS

SECTION 10 - MOBILIZATION

10.1 Description - The contract item Mobilization shall consist of expenditures for all preparatory work and operations, including but not limited to, those costs necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings, construction yards and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site as well as the related demobilization costs anticipated at the completion of the project.

10.2 Payment - The amount credited for Mobilization on each monthly progress payment shall be equal to the total of the amounts credited for work on all the other contract items for that monthly progress payment, up to a cumulative limit of eighty percent (80%) of the lump sum price bid for Mobilization. The remaining twenty percent (20%) of the lump sum price bid for Mobilization will be paid with the final payment.

Payment of the lump sum contract price for Mobilization shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to completion of this item of work.

The deletion of work or the addition of extra work as provided for herein shall not affect the price paid for Mobilization.

SECTION 11 - WATER CONTROL

11.1 Description - This section covers the contract item Water Control. Watersheds and/or urban runoff areas are tributary to the project site at various locations, but do not necessarily follow the alignment of the project under current conditions. Surface water in varying quantities can be expected at any time of the year, and substantial runoff can be expected during periods of rainfall. Groundwater was not encountered at the time of the soils investigation for this project. All bidders shall make their own determination regarding what the surface and/or groundwater conditions will be at the time of construction, and their impact on the bidder's operations and construction phasing.

11.2 Water Control - The contract item Water Control includes the control and/or diversion of surface runoff as well as groundwater within the work area as required in order to complete the work. All work shall be carried on in areas free of water. Care should be exercised so that runoff or diversion flows do not erode, undermine or otherwise damage either facilities which have been constructed or adjacent private properties. The responsibility for the protection of all existing and proposed improvements lies with the Contractor.

11.3 Measurement and Payment - The methods of controlling both surface and groundwater will be the responsibility of the Contractor. The contract lump sum price paid for Water Control shall include full compensation for all direct and indirect costs incurred under this section, and

for doing all the work involved in controlling surface runoff and groundwater within the construction area, as specified in these Detailed Specifications, and as directed by the Engineer.

Payment will be made on a basis of the percentage of the work completed on the entire project.

SECTION 12 - TRAFFIC CONTROL

12.1 Description - Traffic Control shall include labor, flagmen, lights, barricades, signs, materials, temporary bridges and equipment necessary to ensure that the vehicular and pedestrian traffic conforms to requirements as set forth in this section. The Contractor is responsible for any or all haul permits and associated traffic control, if any.

12.2 Notification of Agencies - The Contractor shall notify the following agencies a minimum of 48 hours in advance of start of any street work and inform them of the proposed construction schedule and provide any additional pertinent information they may request:

| | |
|--|---------------------|
| City of Cathedral City (Bill Simon) | 760.770.0340 |
| City of Palm Springs (David Barakian) | 760.323.8253 |
| Desert Water Agency (Steve Johnson) | 760.323.4971 |
| Southern California Edison (Arlan E. Averyt) | 714.796.9920 |
| Southern California Gas Co. (Bruce Waddell) | 909.335.7507 |
| Time Warner Cable (Don Knox) | 760.674.5472 |
| Underground Service Alert | 811 or 800.227.2600 |
| Verizon (Larry Moore) | 760.778.3603 |

The Contractor is not relieved of his responsibility of notifying the various departments and agencies mentioned above, even if their telephone numbers may have changed without notice.

The above agencies shall also be advised by the Contractor of any major change in the construction schedule that could restrict pedestrian or vehicular traffic.

12.3 Public Convenience and Access - The Contractor shall comply with the requirements of Section X of the General Provisions and shall provide continuous access to all private property. Additional provisions shall be made as necessary to protect the public and accommodate traffic with a minimum of inconvenience.

Closures or partial closures of the traveled way implemented by the Contractor shall be related to actual work being performed at the time. Closures shall not be maintained if work is not being performed. If the existing closure is not essential to the type of work being performed at the time, the traveled way shall immediately be restored to a safe condition for public use.

The Contractor shall provide temporary bridge crossings for all driveway entrances to be closed to vehicular access for a period exceeding 4 hours.

Temporary bridges shall have a minimum width of 12 feet for residential driveways and shall be designed for an AASHTO H20 truck loading.

The Contractor shall notify all businesses within 1,000 feet of the project site in writing seven (7) days in advance of commencing the work. Such notice shall contain the Project Schedule and Estimated Completion Date. A copy of each letter shall be submitted to the Engineer.

12.4 Payment - No payment will be made for Traffic Control. All cost associated with traffic control, if any, should be included in the appropriate contract items that may require traffic control.

SECTION 13 - CLEARING AND MISCELLANEOUS WORK

13.1 Description - This section covers the contract items Clearing and Miscellaneous Work; and Extra Directed Work as required for construction of the work. All objectionable materials shall be removed and disposed of outside of the limits of the construction easements and permanent rights of way.

13.2 Clearing and Miscellaneous Work - The contract item Clearing and Miscellaneous Work includes the removal and disposal of all vegetation, trees, roots, stumps, fences, pipes, culverts, rocks, structures, concrete and asphalt excluding those items defined specifically as excavation in the appropriate section.

Included in this item are the following:

1. The temporary relocation of signs and mailboxes, and their reinstallation. Work involving mailboxes shall be coordinated with the Postal Service.
2. The removal and appropriate disposal of surface debris within the limits of the project, including but not limited to treated power poles, empty drums, and asbestos-cement pipe.
3. The abandonment of existing monitoring well GMR-301 located near the proposed dam axis in accordance with State of California well abandonment procedures. The upper portion of this well shall be removed so that it does not interfere with the dam and reservoir construction process. After removal of the upper portion of the well, the lower portion shall be sealed and capped in accordance with California well abandonment procedures. The County of Riverside Community Health Agency, Department of Environmental Health shall be notified, and a well destruction permit shall be obtained from the County of Riverside prior to commencement of the well abandonment.
4. Project Site Maintenance as stated in Section 5.
5. Traffic Control.

Finally, included in this item are those types of work as shown on the drawings not specified for pay under any other individual contract item.

13.3 Extra Directed Work - The contract item Extra Directed Work shall consist of necessary work that is not included in other contract bid items and not shown on the drawings, as determined by the Engineer. All Extra Directed Work shall be performed as directed by the Engineer in accordance with all applicable standards and specifications.

13.4 Payment - The contract lump sum payment for Clearing and Miscellaneous Work shall include full compensation for all material and labor costs incurred under this section and will be made on a basis of the percentage of work completed on the entire project.

Full compensation for the contract item Extra Directed Work shall be made as "Extra Work" and shall be paid pursuant to Section 2.07 of the General Provisions. The total accumulated costs for Extra Directed Work shall not exceed the amount specified in the contract bid item unless otherwise increased by change order.

SECTION 14 - EARTHWORK

14.1 Description - This section covers the contract items Dumped Fill Removal; Lead-Impacted Soil Removal; Removal of Surficial Shooting Range Debris; Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil; Confirmation Soil Sampling; Waste Profiling, Transportation and Disposal (Non-Hazardous); Waste Profiling, Transportation and Disposal (RCRA); Waste Profiling, Transportation and Disposal (Non-RCRA); Final Closure Report; Underground Storage Tank (UST) Removal; Basin Excavation; Basin Excavation (Rock); Abutment Excavation and Shaping (Rock); Dam Foundation Excavation; Spillway Excavation; Stilling Basin Excavation; Access Road Excavation (Rock); Outlet Pipe Trench Excavation; Outlet Channel Excavation; Dam Embankment Core; Dam Embankment (Upstream and Downstream Shells); Backfill for Stilling Basin; and Fill for Access Roads.

It is important to note that the basin fill adjacent to the upstream toe of the dam embankment shall be placed after all earthwork related to outlet pipe backfill is completed and the dam embankment construction reaches elevation 365 or above.

14.2 General Excavation, Foundation and Subgrade Preparation Requirements - Pipe Excavation shall be in conformance with Section 306 of the Standard Specifications. Channel Excavation shall be in conformance with Section 300-7. Access to trenches shall be in conformance with Section 306-1.1.4 and the manner of bracing excavations shall be in conformance with Section 306-1.1.6 of the Standard Specifications. Note: References to "Standard Specifications" herein apply only to the work associated with the contract item "24-Inch Side Inlet Drain Pipe" and not to any earthwork associated with the dam embankment.

Earthwork for the dam and basin shall include clearing, stripping, excavation, fill, backfill, grading and disposal of excess excavated material. The cut and fill area of the dam and basin shall be cleared of all trees and brush. Then, excavation shall be performed as shown on the Dumped Fill Removal Plan, then Dam Foundation and Spillway Excavation Plan and Reservoir Excavation and Grading Plan. Existing fill soils (if any) and loose natural soils (if any) are to be excavated as recommended by the Engineer. The exposed firm natural soils should be carefully observed for removal of all unsuitable deposits. Next, the exposed soil shall be scarified to a depth of 6 inches, brought to near-optimum moisture content and rolled with

compaction equipment to achieve at least 95% relative compaction per ASTM Designation D1557.

Slush grout or dental concrete should be used in the Dam Embankment Core (dam zone constructed using Type 1 Embankment Material) foundation areas on the abutments where fractured and jointed rock is exposed, as well as in depressions or openings. See Section 16.6.23 for full discussion on appropriate use of and payment for Slush Grout, Dental and Backfill Concrete.

In excavating for surfaces against which concrete is to be placed, care shall be exercised in removing the final lift. Upon completion of excavation for structures and pipe, surfaces against which concrete is to be placed shall be free of debris, mud or ponded water.

The foundation for all concrete structures and dam embankment will be inspected and tested after excavation. All foundations will be subject to the approval by both the Engineer and DSOD. The subgrade shall be level, scarified to a depth of 6 inches, moisture conditioned within two (2) percent of optimum moisture content and compacted to a minimum of ninety-five percent (95%) relative compaction according to ASTM D1557.

Specific requirements for the Dam Foundation Excavation are presented in Section 14.15 of these specifications. Material which will not provide a suitable foundation shall be removed and replaced with compacted select material as directed by the Engineer.

Any overexcavation shall be filled with select material compacted to a minimum of ninety-five percent (95%) relative compaction according to ASTM D1557 and shall meet the material requirements for backfill.

Slides and materials eroding into the work shall be removed by the Contractor and the slopes and grades shall be refinished to original grades as specified.

The Contractor shall dispose of all surplus excavated material outside of the limits of the construction easements and permanent rights of way.

The Contractor will be required to remove rock material from within the project paylines that may require the use of blasting or equipment beyond that normally necessary to accomplish the excavation (as determined by the Engineer).

Blasting, when necessary, as approved by the Engineer shall be in accordance with the following paragraph.

Excessive blasting will not be permitted. Any material outside the authorized cross section which may be shattered or loosened because of blasting shall be removed by the Contractor at the Contractor's expense. The Contractor shall discontinue any method of blasting which leads to overshooting or is dangerous to the public or destructive to property or to natural features. Further, velocity monitoring during the blasting operation should be performed by the Contractor.

Excavated rock slopes should be flattened to prevent vertical or overhanging rock slopes. Requirements regarding foundation treatment and shaping are given on Sheet 21 of the construction plans.

The Contractor's attention is directed to the General Provisions, Section V, Article 5.09 on the use of explosives and Article 5.11 in regard to unforeseen difficulties.

Prior to any blasting, a blasting plan developed by a qualified blasting engineer shall be submitted to the Engineer and DSOD for approval. The Contractor is responsible for obtaining all necessary permits associated with blasting from local and State authorities. The cost of permits will be paid for under the contract item Excavation and no additional compensation will be allowed. If the blasting plan does not generate the gradation or size of rocks, the Contractor is responsible for processing the rocks resulting from the blasting. No additional compensation will be allowed for this processing. Costs for any needed additional exploration to evaluate the rock quality within the excavation pay limits should be included in the bid unit price for various rock excavation identified in this specification.

The following information should also be included with the blasting plan submitted to the Engineer for review and approval.

- All appropriate permits from local and State authorities.
- Certification of the Contractor's Blaster which should meet the qualifications of the California State Regulations.
- Experience level of the Contractor's Blaster.
- Anticipated size of rocks from Blasting. Consideration should be given to the project needs such as riprap and crushed rock base. Blasting should be planned such that size of rocks will meet the gradation and size requirement of the project.
- Statements about storage and method of deliveries of explosives, etc., which are in accordance and approved by the regulating authorities.
- The blasting time authorized by appropriate local authorities.
- Planning and procedures for small "test(s)" blasts to confirm blast design.

The Contractor's attention is directed to Appendix "E" of these Detailed Specifications regarding contract items described in Section 14.3 through Section 14.10.

14.3 Dumped Fill Removal - The contract item Dumped Fill Removal consists of removal of dumped fill within the project limits as shown on the drawings. This material is to be removed from its current location and the materials segregated for use as onsite fill material (if suitable) or disposal offsite based on the methodology described in Appendix "E".

The Contractor's attention is directed to Appendix "E" for guidance regarding Dumped Fill Removal. All available supporting documents referenced in Appendix "E" are combined into one file for download at http://rcflood.org/Documents/Eagle_Canyon_Dam/Remediation_Plan_References.pdf. It is intended that the Contractor use approved material from the Dumped Fill Removal for the construction of this project whenever possible, provided it meets the necessary gradation and other requirements for the fill materials.

Materials not suitable for use in the dam embankment (or other fill areas not part of the dam embankment) shall be disposed of at an approved landfill. If necessary, the profiling, transporting and disposing of unsuitable materials will be measured and paid in accordance with Sections 14.8, 14.9 and 14.10 of these contract documents.

14.4 Removal of Surficial Shooting Range Debris - The contract item Removal of Surficial Shooting Range Debris consists of the removal, stockpiling and segregation of surficial shooting range debris, consisting of target debris and lead pellets from Area 1 as shown on Figure 2 of Appendix "E" and as specified in Section 3.1 of Appendix "E" or as directed by the Engineer.

14.5 Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil - The contract item Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil consists of the excavation, stockpiling and segregation of such material from Area 1 and Area 2 as shown on Figure 2 of Appendix "E", as specified in Section 3.2 of Appendix "E" or as directed by the Engineer.

14.6 Confirmation Soil Sampling - The contract item Confirmation Soil Sampling consists of the collection of soil samples from in-situ material (not stockpiled material) as specified in Section 3.3 of Appendix "E" or as directed by the Engineer. Included in this contract item is the laboratory analysis required to determine whether or not the three substances specified in Section 3.3.2 of Appendix "E" are present at concentrations exceeding the cleanup goals.

14.7 Waste Profiling, Transportation and Disposal (Non-Hazardous) - The contract item Waste Profiling, Transportation and Disposal (Non-Hazardous) consists of the profiling of excavated and segregated material, and transporting and disposing of such material to an appropriate landfill as approved by the Engineer.

14.8 Waste Profiling, Transportation and Disposal (RCRA) - The contract item Waste Profiling, Transportation and Disposal (RCRA) consists of the profiling of excavated and segregated material and hauling by a licensed hauler and disposing of such material to an appropriate landfill as approved by the Engineer.

14.9 Waste Profiling, Transportation and Disposal (Non-RCRA) - The contract item Waste Profiling, Transportation and Disposal (Non-RCRA) consists of the profiling of excavated and segregated material and hauling by a licensed hauler and disposing such material to an appropriate landfill as approved by the Engineer.

14.10 Final Closure Report - The contract item Final Closure Report consists of a report prepared by a licensed professional and shall consist of a summary of all laboratory analysis and results. The report shall include remediation actions taken, including disposal of the various classes of waste, with supporting documents, pictures, maps, etc. This report shall be sufficient to allow the County of Riverside Department of Environmental Health to issue a "no further action" (NFA) letter.

14.11 Underground Storage Tank (UST) Removal - The contract item Underground Storage Tank (UST) Removal includes all excavation, backfill, loading, hauling and disposal of material in a regulated landfill including all necessary permits, analysis and testing.

14.12 Basin Excavation - The contract item Basin Excavation includes all excavation and fill required to obtain the basin configuration including access roads within the paylines as shown on the drawings or as directed by the Engineer. All excess material not used for the construction of the project shall be disposed of away from the site. All basin excavation bottoms will be subject to the approval of both the Engineer and DSOD.

14.13 Basin Excavation (Rock) - The contract item Basin Excavation (Rock) is the excavation and disposal of rock material within the Basin Excavation paylines that the Engineer has determined cannot be effectively loosened or broken down by ripping in a single pass with a late

model tractor-mounted hydraulic ripper. The ripper shall utilize one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler type tractor rated between 210 and 240 net flywheel horsepower, operating in low gear. The rock or large boulders determined to be Basin Excavation (Rock) may be reduced for removal by blasting or mechanical means. If Basin Excavation (Rock) is encountered, the Engineer may change the slopes or the depth of the subgrade.

Prior to any blasting associated with the Basin Excavation (Rock), a blasting plan developed by a qualified blasting engineer should be submitted to the Engineer and DSOD for review and approval. Please see Section 14.2 for further details.

14.14 Abutment Excavation and Shaping (Rock) - The contract item Abutment Excavation and Shaping (Rock) includes all excavation required for the dam, abutments to the paylines as shown on the drawings or as directed by the Engineer and the disposal of all excess material not used for the construction of the project, away from the site.

Prior to any blasting associated with the abutment excavation, a blasting plan developed by a qualified blasting engineer should be submitted to the Engineer and DSOD for review and approval. Please see Section 14.2 for further details.

Abutment excavation should extend to competent bedrock, as determined by the Engineer. If residual boulders occur in the finished excavation and are detached or partially detached from the exposed competent Diorite Gneiss rock, they must be removed prior to fill placement. Where the boulders appear to occur within the exposed rock and are not detached or separated from the decomposed rock, they may be left in place. Some blasting may be required in order to achieve a reasonably smooth foundation surface against which fill may be placed. Holes resulting from removal of any of these residual boulders would have to be backfilled with dental concrete to achieve a reasonably smooth and uniform surface. Residual boulders occurring on the abutment slopes above the crest elevation of the dam should also be removed if they pose a potential threat to personnel and equipment. All overhanging bedrock shall be removed. General guidelines for foundation treatment and shaping are given on Sheet 21 of the construction plans. As directed by the Engineer, exposed bedrock materials are to be cleaned using air or water jet, but use of water jet may not be permitted within the limits of dam foundation excavation; however, the cleaned rock surface shall be moistened before placing the fill against it. This cleanup of exposed bedrock surfaces shall be completed before commencing the construction of the dam embankment.

After the abutment excavation has been completed, the Engineer and DSOD representatives will inspect and test the exposed surfaces. Any areas determined unsuitable for the support of the embankment shall be excavated as directed by the Engineer. All additional excavation, as directed, will be paid for at the unit price bid for Abutment Excavation and Shaping (Rock).

All additional excavation, as directed will be paid for at the unit price bid for Abutment Excavation and Shaping (Rock).

14.15 Dam Foundation Excavation - The contract item Dam Foundation Excavation includes all excavation including rock required to obtain the foundation configuration within the paylines as shown on the drawings or as directed by the Engineer and the disposal of all excess material not used for the construction of the project, away from the site.

After the dam foundation excavation has been completed, the Engineer and DSOD representatives will inspect and test the exposed surfaces. Any areas determined unsuitable for the support of the embankment shall be excavated as directed by the Engineer. The criteria for acceptable foundation are presented below.

As a minimum requirement, the upper 20 feet of existing alluvial materials, as well as all alluvium containing debris, shall be removed during the foundation preparation. However, in order to determine that the foundation excavation is adequate and has reached the suitable stratum to support the proposed dam, test pits shall be excavated to depths of approximately 3 feet under the direction and observation of the Engineer and DSOD representatives. The total number of test pits will be determined by the Engineer and DSOD representatives during the construction. Sand Cone tests, according to ASTM Test Designation D1556 will be performed by the Engineer at the bottom of the test pits to determine the in-situ dry density and relative compaction of the exposed foundation material. If the gravel content in a soil sample exceeds 20% by dry weight, ASTM D1556 is not applicable for dry density testing. Should the gravel content exceed 20% by dry weight, dry density testing should be performed using ASTM Designation D4914 or D5030. If the dry density of the exposed foundation material with a gravel content less than 20% has a dry density of at least 130 pounds per cubic foot (pcf) or at least 95% relative compaction based on maximum dry density obtainable per ASTM D1557, it can be considered as suitable foundation material to support the dam. If the gravel content of the exposed foundation material exceeds 20% by dry weight, a dry density of at least 125 pounds per cubic foot (pcf) can be considered as suitable foundation material. Foundation excavation shall continue until the dry density or relative compaction criterion is met. Test pits shall be backfilled using 4-inch thick loose lifts compacted to 95% relative compaction based on maximum dry density obtainable per ASTM D1557. The Contractor shall use hand compaction equipment in the test pits due to width limitations. It shall be noted that the maximum particle size allowed for this backfill is 2 inches.

For materials having oversize particles up to 20% by dry weight, corrections for unit weight and water content will be performed for compaction tests and density tests based on ASTM Designation D4718 for all materials that have more than 5% oversize particles (particles retained on a 3/4-inch sieve).

14.16 Spillway Excavation - The contract item Spillway Excavation includes all excavation including rock required to obtain the spillway configuration within the paylines as shown on the drawings or as directed by the Engineer and the disposal of all excess material not used for the construction of the project, away from the site.

Prior to any blasting associated with the spillway excavation, a blasting plan developed by a qualified blasting engineer should be submitted to the Engineer and DSOD for review and approval. Please see Section 14.2 for further details.

The Engineer, upon determining the slope stability of the spillway excavation, may elect to change the sideslopes above the top of the spillway sidewalls as indicated on the plans and the sideslopes of the lower part of the spillway as indicated on the plans where the spillway chute slab and sidewalls will be constructed to reduce total excavation.

14.17 Stilling Basin Excavation - The contract item Stilling Basin Excavation includes all soil and rock excavation required to obtain the stilling basin configuration within the paylines as shown on the drawings or as directed by the Engineer, and the disposal of all excess material not used for the construction of the project, away from the site. Stilling basin final grade will be subject to inspection and approval by both the Engineer and DSOD.

This excavation shall be adequate to place the required backfill around the stilling basin as shown on the drawings. All loose material shall be removed from the stilling basin excavation prior to stilling basin construction and backfilling around the stilling basin.

14.18 Access Road Excavation (Rock) - The contract item Access Road Excavation (Rock) includes all excavation required to obtain the access road configuration within the paylines as

shown on the drawings or as directed by the Engineer and the disposal of all excess material not used for the construction of the project, away from the site.

Prior to any blasting associated with the Access Road Excavation (Rock), a blasting plan developed by a qualified blasting engineer should be submitted to the Engineer and DSOD for review and approval. Please see Section 14.2 for further details.

14.19 Outlet Pipe Trench Excavation - The contract item Outlet Pipe Trench Excavation covers all excavation required to install the outlet pipe and cradle as shown on the drawings or as directed by the Engineer. All loose material shall be removed from the pipe trench prior to concrete and fill placement. Outlet Pipe Trench Excavation and final grade will be subject to inspection and approval by both the Engineer and DSOD.

The outlet pipe excavation shall be performed after the dam embankment is constructed to Elevation 353. The excavation for the outlet pipe shall be by open trench and carefully excavated to the established lines and grades as shown on the plans, or as revised and approved by the Engineer, to provide a firm, uniform, and unyielding foundation for the entire length of the outlet conduit. If the foundation of the outlet pipe at any location along the alignment is such that it is unsatisfactory to the Engineer, materials shall be removed to such depths as directed by the Engineer. The unsuitable materials shall be replaced with backfill concrete which has same strength as concrete to be used for the construction of the pipe cradle.

14.20 Outlet Channel Excavation - The contract item Outlet Channel Excavation includes all excavation required to obtain the outlet channel configuration within the paylines as shown on the drawings or as directed by the Engineer and the disposal of all excess material not used for the construction of the project, away from the site. Outlet Channel Excavation final grade will be subject to inspection and approval by both the Engineer and DSOD.

This includes the excavation required for the placement of the riprap along the outlet channel as shown on the drawings. All loose material shall be removed from the outlet channel trench prior to riprap placement.

14.21 General Backfill Requirements - In general, backfill material shall consist of sandy materials and meet the gradation requirements in the table below. However, the backfill materials within the dam embankment shall conform to the gradation of the Type 1 Embankment Material, core materials if the backfill area is within the core zone, and it shall conform to the gradation of the Type 2 Embankment Material, shell materials as discussed in Section 14.22 if the backfill area is within the shell zone.

| Sieve Size | Percent Passing |
|------------|-----------------|
| 3 in | 100 |
| 1-½ in | 90-100 |
| ¾ in | 60-95 |
| No. 4 | 45-85 |
| No. 8 | 30-70 |
| No. 16 | 15-55 |
| No. 30 | 5-40 |
| No. 50 | 0-30 |
| No. 100 | 0-20 |
| No. 200 | 0-12 |

All backfill material placed shall be moistened and shall be free from sod, roots, brush, debris, trash and other objectionable material and shall be placed in horizontal layers not over 8

inches in depth before being compacted to a minimum of ninety-five percent (95%) relative compaction in accordance with ASTM D1557. The moisture content of the material shall be within 2 percent (2%) of optimum moisture content and moisture conditioning of the fill material shall be performed at the borrow or stockpile area. Material placed within 5 feet of structures, such as the outlet pipe, shall be placed in 4 inch lifts and compacted with hand compactors to the required relative compaction. The maximum particle size in the fill cannot be greater than 2 inches. Earthmoving equipment shall not encroach within 5 feet of concrete structures or other concrete features, such as the outlet pipe.

No backfill materials shall be placed against the outside walls of cast-in-place concrete structures until the concrete has developed eighty percent (80%) of its design strength as presented in Section 16 of these specifications. No fill or traffic will be permitted on the top of any cast-in-place concrete structure until the concrete in the structure has attained its design strength. Compressive strength will be determined by test cylinders taken by the Engineer.

Regardless of the method of densification, backfill material shall not be placed against any reinforced concrete structure until the structure has been inspected and approved for backfilling by the Engineer.

For this project, the water densification of backfill will not be permitted. Densification of backfill will be accomplished by mechanical methods as described below. All relative compaction tests will be made by the Engineer in conformance with ASTM Designation D1557 method of compaction. Whenever relative compaction is specified to be determined by ASTM Designation D1557, the in-place density may be determined by ASTM Test Designation D1556 (Sand Cone Method).

During fill placement, density tests using the sand cone method (ASTM D1556) will be performed by the Engineer with the minimum number of density tests that satisfy all three testing conditions listed below:

- a. One every 2,000 cubic yards of fill;
- b. One per lift or every two-foot vertical thickness of fill;
- c. One per shift.

However, more frequent density testing may be required as determined to be necessary by the Engineer. Gradation testing to verify compliance with the specifications will be required as determined to be necessary by the Engineer or a minimum of one test for every 2,000 cubic yards of fill placement.

Additional density tests beyond the minimum number of tests required by sand cone method may be performed using ASTM Test Designation D2922 (Nuclear Gauge Method). All field density testing will be done by the Engineer or his representative. The dry weight basis and English units of measurement should be used to report the results of compaction tests and density tests. Considering that on-site materials have oversize particles up to twenty percent (20%) by dry weight, correction for unit weight and water content will be performed for compaction tests and density tests based on ASTM Designation D4718 for all the materials that have more than five percent (5%) oversize particles (particles retained in 3/4-inch sieve).

Backfill shall be mechanically compacted by means of tamping rollers (such as sheepsfoot tamper roller), or other mechanical tampers approved as equivalent. Roller drums shall be no less than 60 inches in diameter and not less than 60 inches in length. The static weight of the roller shall not be less than 4,000 pounds per lineal foot of drum length. The number of passes to achieve the required relative compaction shall be a minimum of 8 passes. Impact-type pavement breakers (stompers) will not be permitted.

All backfill material for structures shall be placed in horizontal, uniform layers and shall be brought up uniformly on each side of the structure. The thickness of each layer of soil backfill shall not exceed 8 inches before compaction unless otherwise approved by the Engineer.

Approval to use specific methods and compaction equipment shall not be construed as guaranteeing or implying that the use of such methods and equipment will not result in damage to adjacent ground, existing improvements or improvements installed under the contract, nor shall it be construed as guaranteeing proper compaction. The Contractor shall make his own determination in this regard.

All soil backfill around structures and pipe shall be compacted to not less than ninety-five percent (95%) relative compaction in accordance with ASTM D1557.

Trench bottoms for structures and pipe shall be graded to provide firm and uniform bearing throughout the entire length of the structures and pipe. No bedding material will be allowed below the inlet structure or outlet pipe through the dam.

Pipe bedding shall consist of well graded granular material having a sand equivalent value of not less than 30 and be capable of being readily consolidated by vibrating. Gravel of crushed aggregate shall not be used for bedding materials. Pipe bedding shall be placed to one foot above the top of the reinforced concrete pipe or box as shown on the drawings. The Contractor may use onsite material for pipe bedding subject to the approval of the Engineer and provided it meets the requirements as set forth above.

The Contractor's attention is directed to Section 7 – Soil Report. The Contractor may use onsite material for pipe bedding subject to the approval of the Engineer and provided it meets the requirements as set forth above. The Contractor shall make his own determination as to the availability of suitable onsite material. Should onsite material be unsatisfactory, the Contractor will be required to import suitable material.

Any fill material placed that is determined by the Engineer to not be in compliance with the minimum requirements of these specifications shall be removed and properly replaced by the Contractor at his own expense.

All imported material shall be tested to verify that its properties are equivalent to accepted material.

14.22 Dam Embankment Requirements - No embankment material shall be placed in any section of the dam until the foundation for that section has been approved by the Engineer and DSOD representatives.

In general, uncontaminated (or clean) onsite soils (alluvium) are adequate for use as fill for the dam embankment. Excavated materials from the debris basin area may be used as fill for the dam embankment as directed by the Engineer. Fine-grained soils (e.g., silt) that are encountered during the excavation of the debris basin and channel areas should be mixed with the predominately sandy onsite soil prior to placement as Type 1 Embankment Material in the core zone of the embankment. Mixing and Moisture conditioning of the soils used in the dam embankment shall be performed at the borrow or stockpile site. Mixing and Moisture conditioning will not be permitted at the dam embankment. The gradation requirements of the Type 1 and Type 2 Embankment Materials to be used in the three different zones of the dam embankment are listed below:

- Zone 1 – Core Zone (Type 1 Embankment Material)
- Zone 2 – Upstream Shell (Type 2 Embankment Material)
- Zone 3 – Downstream Shell (Type 2 Embankment Material)

The required gradation requirements for each material are given in the tables below:

**Gradation Requirements for Core Zone
(Type 1 Embankment Material)**

| Sieve Size | Percent Passing (By Weight) |
|------------|-----------------------------|
| 3 in. | 100 |
| 1-½ in. | 90-100 |
| 3/8 in. | 75-100 |
| No. 4 | 60-100 |
| No. 8 | 50-90 |
| No. 16 | 35-80 |
| No. 30 | 25-70 |
| No. 50 | 20-60 |
| No. 100 | 15-45 |
| No. 200 | 12-30 |

**Gradation Requirements for Upstream and Downstream Shells
(Type 2 Embankment Material)**

| Sieve Size | Percent Passing (By Weight) |
|------------|-----------------------------|
| 3 in. | 100 |
| 1-½ in. | 90-100 |
| 3/8 in. | 60-95 |
| No. 4 | 45-85 |
| No. 8 | 30-70 |
| No. 16 | 15-55 |
| No. 30 | 5-40 |
| No. 50 | 0-30 |
| No. 100 | 0-20 |
| No. 200 | 0-12 |

All fill soils shall be placed in thin lifts (maximum of 8 inches loose), moisture conditioned and compacted until final grades are attained. The maximum particle size for fill soils should be no greater than 3 inches provided sufficient fine-grained materials surround the oversized particles, and oversized particles are not placed in concentrated pockets. Imported materials shall be relatively homogeneous and free of debris, vegetation or other deleterious materials, and shall not contain any particles greater than 3 inches in diameter.

Embankment materials shall be placed in a direction parallel to the dam axis and shall also be compacted in a direction parallel to the dam axis.

All fill and processed foundation materials shall be compacted to a minimum relative compaction of ninety-five percent (95%) in accordance with ASTM D1557. The moisture content of the material shall be within 2 percent (2%) of optimum moisture content. No rubber tired rollers for compaction will be allowed in lieu of acceptable compaction equipment. A Caterpillar 825 compactor or equivalent shall be used. Subject to approval by Engineer, the equipment could be vibratory drum, padfoot vibratory rollers, sheepsfoot or vibratory sheepsfoot. Roller drums shall be no less than 60 inches in diameter and not less than 60 inches in length. The static weight of the roller shall not be less than 4,000 pounds per lineal foot of drum length. The sheepsfoot pads shall be replaced if worn beyond the manufacturer's recommendation. The number of passes to achieve the required relative compaction shall be a minimum of 8 passes. The method of compaction shall be subject to the approval of the Engineer.

During fill placement, density tests using the sand cone method (ASTM D1556) will be performed by the Engineer with the minimum number of density tests that satisfy all three testing conditions listed below:

- a. One every 2,000 cubic yards of fill;
- b. One per lift or every two feet thick of fill; and
- c. One per shift.

However, more frequent density testing may be required as determined to be necessary by the Engineer. Gradation testing to verify compliance with the specifications will be required as determined to be necessary by the engineer or a minimum of one test for every 2,000 cubic yards of fill placement.

In all areas to receive engineered fill, the Contractor shall scarify to a depth of 6 inches below the bottom of the engineered fill, moisture-condition to a moisture content within the range of 2 percent (2%) below to 2 percent (2%) above the optimum moisture content, and compact to a minimum of ninety-five percent (95) relative compaction in accordance with ASTM D1557.

Material placed in the dam embankment shall be disked, harrowed or manipulated by other approved methods so as to obtain the best possible mixture and gradation, and shall be free from lenses, pockets or streaks of material differing substantially in texture and gradation from the surrounding material.

Prior to and during the compaction operations, the material in each layer of the embankment shall, if necessary, be moisture-conditioned to attain the required moisture content. The moisture content shall be uniform throughout the layer. The moisture content of the soils at the time of compaction shall be within the range of 2 percent (2%) below to 2 percent (2%) above the optimum moisture content.

Embankment material which contains excessive moisture shall not be compacted until the material is sufficiently dry to comply with the specified moisture content. No separate payment will be made for any additional work involved in drying embankment material to the required moisture content.

Receiving surfaces that have dried between placements shall be moisture-conditioned.

To obtain the specified moisture content, the Contractor will be required to perform such operations as are considered necessary by the Engineer. Application of water to the material for this purpose shall be done at the site of excavation as far in advance of excavation operations as possible to provide uniformity of moisture content. Supplementary water, as required, shall be added to each layer and to the foundation by sprinkling the soil and by discing, harrowing or otherwise manipulating the soil during and after the time the water is added. No layer of fill shall be compacted before the specified moisture content has been obtained.

All imported material shall meet the gradation requirements of the zone where the material will be placed and compacted. All proposed import materials should be approved by the Engineer prior to being placed at the site. Additional tests such as an expansion index or corrosivity tests may be requested by the Engineer to verify the suitability of the import material.

The Contractor shall first place each lift of the core materials higher than the adjacent shell materials in a trapezoidal shape with the top width equal to or slightly greater than the width specified for the core at that elevation, and with the bottom width of the lift placed wider than the top of the lift. A maximum overlap of 12 inches will be permitted between the upstream

and downstream edges of each core lift and the adjacent shell materials. The minimum width of the core at any elevation shall be as shown on the drawings. Each lift of the upstream and downstream shell materials (Zone 2 and Zone 3) shall then be placed against sides of the core lift, compacted and brought to match the elevation of the top of the core lift. The maximum allowable elevation difference between the core zone and shell zones shall be 12 inches.

14.23 Dam Embankment Core - The contract item Dam Embankment Core includes all material, loading, hauling, placing, blending, moisture conditioning, and compaction to construct the Dam Embankment Core which includes backfill for that portion of the outlet pipe within the core as shown on the drawings. The Contractor may elect to use onsite material or import material for this item. If the Contractor chooses to use onsite material Contractor shall prepare a grading plan and obtain approval from the Engineer. No additional payment will be made for costs associated with importing materials.

As part of the bidding process, all potential bidders are strongly requested to identify a quarry that can supply adequate Type 1 Embankment Material (up to about 25,000 cubic yards) to complete the core of the dam. Required quantity may be less, but the unit price should be based on the assumption that quantity up to 25,000 cubic yards may be required.

14.24 Dam Embankment (Upstream and Downstream Shells) - The contract item Dam Embankment (Upstream and Downstream Shells) includes all material, loading, hauling, placing, blending, moisture conditioning, and compaction to construct the Dam Embankment which includes the backfill for that portion of outlet pipe within the shells as required in Section 14.22 and as shown on the drawings. The Contractor may elect to use onsite material or import material for this item. No additional payment will be made for costs associated with importing materials.

14.25 Backfill for Stilling Basin - The contract item Backfill for Stilling Basin includes all material, loading, hauling, placing, blending, moisture conditioning, and compaction of backfill materials for the stilling basin structures to the paylines as shown on the drawings.

14.26 Fill for Access Roads - The contract item Fill for Access Roads includes all material, compaction, loading, hauling, placing, blending, moisture conditioning, testing for gradation, expansion index, and corrosivity to meet the specification of backfill in Section 14.21 necessary to construct the access roads (east access road and lower access road) on the downstream side of the dam and the outlet channel as shown on the plans.

14.27 Measurement - Dumped Fill Removal; Removal of Surficial Shooting Range Debris; Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil; Confirmation Soil Sampling; Waste Profiling, Transportation and Disposal (Non-Hazardous); Waste Profiling, Transportation and Disposal (RCRA); Waste Profiling, Transportation and Disposal (Non-RCRA); Final Closure Report; Underground Storage Tank (UST) Removal; Basin Excavation; Basin Excavation (Rock); Abutment Excavation and Shaping (Rock); Dam Foundation Excavation; Spillway Excavation; Stilling Basin Excavation; Access Road Excavation (Rock); Outlet Pipe Trench Excavation; Outlet Channel Excavation; Dam Embankment Core; Dam Embankment (Upstream and Downstream Shells); Backfill for Stilling Basin; and Fill for Access Roads beyond the pay limits established by the drawings, unless ordered in writing by the Engineer, will not be measured for payment.

The excavated material shall be measured from the ground surface existing at the start of excavation, as determined from surveyed cross sections taken by the District, to the lines, grades and dimensions shown on the drawings. Longitudinal limits of the excavations as shown on the profile drawings terminate at a vertical plane at the limits of the structure, measured along the longitudinal axis of the various structures. It should be noted that close coordination between the Contractor and the Engineer is required for the necessary surveys.

No measurement for payment will be made for any additional earthwork required for the construction of the intake structure and outlet pipe headwall.

No separate payment will be made for furnishing and applying water.

Measurement for payment for the contract item Dumped Fill Removal will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. Measurement for payment for the contract bid item Dumped Fill Removal will be exclusive of measurement for payment for the contract bid items Basin Excavation; Dam Foundation Excavation; and Spillway Excavation.

Measurement for payment for the contract item Removal of Surficial Shooting Range Debris will be the number of cubic yards of surficial shooting range debris material removed, stockpiled and segregated.

Measurement for payment for the contract item Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil will be the number of cubic yards of excavated shooting range debris material removed, stockpiled and segregated.

Measurement for payment for the contract item Confirmation Soil Sampling will be the number of samples collected from the in-situ material for soil confirmation and characterization as specified in Appendix "E" or as directed by the Engineer.

Measurement for payment for the contract item Waste Profiling, Transportation and Disposal (Non-Hazardous) will be the number of tons of waste profiled, transported to and disposed of at an appropriate landfill as approved by the Engineer. No separate payment shall be made for waste profiling under this item.

Measurement for payment for the contract item Waste Profiling, Transportation and Disposal (RCRA) will be the number of tons of waste profiled, transported to and disposed of at an appropriate landfill as approved by the Engineer. No separate payment shall be made for waste profiling under this item.

Measurement for payment for the contract item Waste Profiling, Transportation and Disposal (Non-RCRA) will be the number of tons of waste profiled, transported to and disposed of at an appropriate landfill as approved by the Engineer. No separate payment shall be made for waste profiling under this item.

No measurement for payment will be made for the contract item Final Closure Report. Payment will be made upon approval by engineer of said report on a lump sum basis.

No measurement for payment will be made for the contract item Underground Storage Tank (UST) Removal. Payment will be made on a lump sum basis.

Measurement for payment for the contract item Basin Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. Measurement for payment for the bid item Basin Excavation will be exclusive of measurement for payment for the bid item Dumped Fill Removal; Dam Foundation Excavation; and Spillway Excavation.

Measurement for payment for the contract item Basin Excavation (Rock) will be the number of cubic yards of material and shall be made only if the Engineer has determined that it qualifies as Basin Excavation (Rock) per the guidelines set forth in Section 14.13. Areas deemed such shall be cleaned of all loose material and the surface cross sectioned based on survey data to create an upper limit. After excavation, the area will again be cross sectioned based on survey data to form the lower limit. The volume will be determined by the average end area method. Large boulders declared as Basin Excavation (Rock) may be measured by taking the average circumference and using the formula for a sphere.

Measurement for payment for the contract item Abutment Excavation and Shaping (Rock) will be the number of cubic yards of material excavated as directed by the Engineer.

Measurement for payment for the contract item Dam Foundation Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer and will be based on surveys using the post-dumped fill removal ground surface as the upper limit. Partial clearing may be required to facilitate cross sectioning. The lower ground surface will be based on cross sections taken after Dam Foundation Excavation has been completed. This will also be the lower limit for dam embankment measurement with the upper limit being the finish surfaces of the structural embankment as shown on the drawings. Measurement for payment for the contract bid item Dam Foundation Excavation will be exclusive of all measurement and payment for the contract bid items Basin Excavation and Dumped Fill Removal.

Measurement for payment for the contract item Spillway Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. District surveyors will measure the existing ground surface prior to starting Spillway Excavation. After excavation the District will resurvey the area and provide volume calculations. Measurement for payment for the contract item Spillway Excavation will be exclusive of measurement for payment for the contract items Basin Excavation (Rock); Access Road Excavation (Rock); Abutment Excavation and Shaping (Rock); and Stilling Basin Excavation.

Measurement for payment for the contract item Stilling Basin Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. District surveyors will measure the existing ground surface prior to starting Stilling Basin Excavation. After excavation the District will resurvey the area and provide volume calculations. Measurement for payment for the contract item Stilling Basin Excavation will be

exclusive of measurement for payment for the contract items Spillway Excavation; Abutment Excavation and Shaping (Rock); and Dam Foundation Excavation.

Measurement for payment for the contract item Access Road Excavation (Rock) will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. Surveyed cross sections will be taken prior to the start of the excavation and after the Access Road Excavation (Rock) has been completed. Measurement for payment for the contract item Access Road Excavation (Rock) will be exclusive of the measurement for payment for the contract items Spillway Excavation; Abutment Excavation and Shaping (Rock); Stilling Basin Excavation; and Dam Foundation Excavation.

Measurement for payment for the contract item Outlet Pipe Trench Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer and will be based on surveys using the grade of the dam embankment before excavation as the upper limit. The lower ground surface will be based on cross sections taken after the trench excavation has been completed.

Measurement for payment for the contract item Outlet Channel Excavation will be the number of cubic yards of material excavated as shown on the drawings or as directed by the Engineer. Surveyed cross sections will be taken prior to the start of the excavation and after the Outlet Channel Excavation has been completed. Measurement for payment for the contract item Outlet Channel Excavation will be exclusive of the measurement for payment for the contract items Dam Foundation Excavation; Abutment Excavation and Shaping (Rock); and Outlet Pipe Trench Excavation.

Measurement for payment for the contract item Dam Embankment Core will be the number of cubic yards of Type 1 Embankment Material placed as specified within the limits of the paylines as shown on the drawings. Volumes occupied by outlet pipe and cradle for which a separate payment is made will be deducted from the gross volume.

Measurement for payment for the contract item Dam Embankment (Upstream and Downstream Shells) will be the number of cubic yards of Type 2 Embankment Material placed as specified within the limits of the paylines as shown on the drawings. Volumes occupied by outlet pipe and cradle for which a separate payment is made will be deducted from the gross volume.

Surveyed cross sections will be taken throughout the construction of the Dam Embankment (Upstream and Downstream Shells) to determine the volume of the Dam Embankment.

Measurement for payment for the contract item Backfill for Stilling Basin will be the number of cubic yards of material placed in final position as specified and within the limits of the paylines shown on the drawings. The longitudinal limits shall terminate at a vertical plane at the limits of the pipe or structure measured along the longitudinal axis of the various pipe or structures. Volumes occupied by structures and other features for which a separate payment is made will be deducted from the gross volume.

Measurement for payment for the contract item Fill for Access Roads will be the number of cubic yards of material placed in final position as specified and within the limits of the

paylines shown on the drawings. Volumes occupied by structures and other features for which a separate payment is made will be deducted from the gross volume.

14.28 Payment - The contract prices paid for Dumped Fill Removal; Removal of Surficial Shooting Range Debris; Excavation and Stockpiling of Subsurface Shooting Range Debris and Impacted Soil; Confirmation Soil Sampling; Waste Profiling, Transportation and Disposal (Non-Hazardous); Waste Profiling, Transportation and Disposal (RCRA); Waste Profiling, Transportation and Disposal (Non-RCRA); Final Closure Report; Underground Storage Tank (UST) Removal; Basin Excavation; Basin Excavation (Rock); Abutment Excavation and Shaping (Rock); Dam Foundation Excavation; Spillway Excavation; Stilling Basin Excavation; Access Road Excavation (Rock); Outlet Pipe Trench Excavation; Outlet Channel Excavation; Dam Embankment Core; Dam Embankment (Upstream and Downstream Shells); Backfill for Stilling Basin; and Fill for Access Roads. Shall include full compensation for all costs incurred under this section.

SECTION 15 - TRENCH SAFETY SYSTEM AND PERSONAL PROTECTIVE EQUIPMENT

15.1 Description - This section covers the contract items Trench Safety System and Personal Protective Equipment, OSHA Training and Fitness Test. Trench Safety System is defined as a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Trench safety systems include support systems, sloping and benching systems, shield systems and other systems that will provide necessary protection. The item includes the furnishing and implementation of the safety system as required by rules, orders, and regulations of the Division of Industrial Safety of the State of California or as directed by the Engineer.

Also included in this section are the safety requirements personnel must follow during shooting range debris and impacted soil removal in Areas 1 and 2 shown on Figure 2 of Appendix "E".

15.2 Trench Safety System - Excavation for any trench five (5) feet or more in depth shall not begin until the Contractor has received approval from the Engineer of a detailed plan for worker protection from the hazards of caving ground during the excavation of the trench. The plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection including any design calculations done in the preparation of the plan. No such plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal-OSHA). The plan shall be prepared and signed by an engineer who is registered as a civil engineer in the State of California, and the plan and design calculations shall be submitted for review and approved at least two (2) weeks before the Contractor intends to begin trenching operations.

All safety plans shall reflect surcharge loadings imparted to the side of the trench by equipment and stored materials. Surcharge loads shall be monitored to verify that such loads do not exceed the design assumptions for the system.

The Contractor should not assume that only one type of trench safety system such as a shield or "trench box" will be adequate for all trenching situations encountered on a given

project. The Contractor should be prepared with alternative safety system designs (such as solid sheeting) should construction circumstances dictate the use of such.

Trench safety system designs for support systems, shield systems or other protective systems whether drawn from manufacturers' data, other tabulated data or designed for this particular project must be signed by a civil engineer registered in the State of California prior to submittal to the District for review. A shoring plan for the specific use of a shield shall be prepared. Catalogs or engineering data for a product should be identified in the plan as supporting data. All specific items or applicable conditions must be outlined on the submittal.

The State of California Department of Transportation "Trenching and Shoring Manual" will be used as a guide for plan review and approval.

Also included in this item is the fencing and barricading of the open trench as required for the safety of pedestrians and vehicular traffic as directed by the Engineer.

15.3 Personal Protective Equipment, OSHA Training and Fitness Test - The contract item Personal Protective Equipment, OSHA Training and Fitness Test only applies to personnel involved in the remediation work described in Appendix "E" and includes: 1) the OSHA training of personnel for 40 hours per 29 CFR 1910.120; 2) enrollment in a medical surveillance program that includes analysis for lead levels in blood and lung capacity testing for clearance to wear a respirator for staff working with lead-affected soil or within the lead-affected areas and lead awareness training and a fitness test for use of a respirator; and 3) the required Level C personal protective equipment consisting of Tyvek coveralls and half-face respirator with particulate cartridges as specified in Appendix "E" of these contract documents.

15.4 Measurement and Payment - The contract lump sum price paid for the item Trench Safety System, etc. shall include full compensation for all costs incurred under this section.

This payment will be made on a basis of the percentage of the work completed on the items related to trenching operations.

The contract lump sum price paid for the item Personal Protective Equipment, OSHA Training and Fitness Test shall include full compensation for all costs incurred under this section.

SECTION 16 - CONCRETE CONSTRUCTION

16.1 Description - This section includes the technical specifications for concrete construction and the contract items for the various classes of Concrete.

16.2 Concrete Formwork - The Contractor shall furnish all labor, materials, equipment and incidentals for the design, manufacture, installation and removal of concrete forms.

Related Sections -

- 16.3 Concrete Reinforcement
- 16.4 Waterstops
- 16.5 Joints and Edges in Concrete
- 16.6 Cast-in-Place Concrete
- 16.7 Concrete Placement Drawings
- 16.8 Weepholes

References -

American Concrete Institute (ACI):

ACI 117 Standard Tolerances for Concrete Construction and Materials

- ACI 301 Specifications for Structural Concrete for Buildings,
Chapter 4, Formwork
- ACI 347 Recommended Practice for Concrete Formwork

16.2.1 Design - Forms shall be used, wherever necessary, to confine the concrete and shape it to the required lines and grades. The Contractor shall set and maintain concrete forms so as to ensure completed work is within all applicable tolerance limits. If a type of form does not consistently perform in an acceptable manner, the type of form shall be changed and the method of erection shall be modified by the Contractor, subject to approval by the Engineer.

Plumb and string lines shall be installed before, and maintained during, concrete placement. Such lines shall be used by the Contractor's personnel and shall be in sufficient number and properly installed as determined by the Engineer. During concrete placement, the Contractor shall continually monitor plumb and string line form positions and immediately correct deficiencies.

Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. Forms shall be sufficiently rigid to effectively transmit energy from the form vibrators to the concrete, while not damaging or altering positions of forms. Forms shall be sufficiently tight to prevent loss of mortar from the concrete. Chamfer strips shall be placed in the corners of forms and at the tops of wall placements to produce beveled edges on permanently exposed concrete surfaces. Interior angles of intersecting concrete surfaces and edges of construction joints shall not be beveled except where indicated on the drawings.

16.2.2 Form Sheathing and Lining - Wood sheathing or lining shall be softwood or plywood of such kind and quality, or shall be so treated or coated, that there will be no chemical deterioration or discoloration of the formed concrete surfaces. The type and condition of form sheathing and lining, and the fabrication of forms for finishes F1, F2 and F4 shown on Table 16.2.2 shall be such that the resulting concrete surfaces will have uniform texture and will meet all applicable finish and tolerance requirements. The ability of form sheathing and lining to withstand distortion caused by placement and vibration of concrete shall be such that formed surfaces will conform with specified tolerances.

Where used for form sheathing, softwood lumber shall meet applicable requirements of the latest edition of the "Grading Rules for Western Lumber" as published by the Western Wood Products Association for dressed lumber or worked lumber of the grade hereinafter specified. All common boards shall be surfaced on both edges (S2E) in accordance with the standard grading

rules. Plywood used for form sheathing or lining shall be concrete form, class 1, grade B-B, exterior, mill oiled and edge sealed, in accordance with the latest edition Product Standard PS1 of the U.S. Department of Commerce. Materials used for form sheathing or lining shall conform with the requirements of Table 16.2.2, or may be other materials producing equivalent results.

**TABLE 16.2.2
FORM SHEATHING AND LINING MATERIAL REQUIREMENTS**

| Required Finish of Formed Surface | Formed Surface Specification Section | Wood Sheathing or Lining | Steel Sheathing or Lining* |
|--|---|---|---|
| F1 | 16.6.19.2.b | Any grade common board or plywood. | Steel sheathing permitted. Steel lining permitted. |
| F2 | 16.6.19.2.c | No. 2 common or better, shiplap or plywood. | Steel sheathing permitted. Steel lining permitted, if approved. |
| F4 | 16.6.19.2.d | For plane surfaces, plywood shall be used. For warped surfaces, plywood or lumber, which is free from knots and other imperfections and which can be cut and bent accurately to the required curvatures without splintering or splitting shall be used. Where required curvature is especially severe, forms may be lined with continuously supported, flexible material such as masonite or thin plywood. Need for such liners is subject to approval by the Engineer. | Steel sheathing permitted. |

*"Steel sheathing" donotes steel sheets not supported by a wood backing. "Lining" denotes thin sheets supported by a wood backing.

16.2.3 Uniformity of Forming Material - Forms for exposed concrete surfaces to receive finish F2 shall be constructed so as to produce a uniform and consistent texture and pattern on the face of the concrete. Metal patches on forms for these surfaces will not be permitted. The form sheathing or lining shall be placed so that all horizontal form marks are continuous across the entire surface. If forms are constructed of plywood form lining or of panels of board lumber, the vertical form marks shall be continuous for the entire height of the surface. If forms for concrete surfaces to receive F2 finishes are

constructed of board lumber that is not paneled, the boards shall be cut square, and the vertical joints in the boards shall be staggered and shall be made only at studs. The Contractor shall use one type of form material for all exposed F2 surfaces. If the Contractor elects to use board lumber for forms for F2 surfaces, the lumber shall either be all 6-inch or all 8-inch lumber.

- 16.2.4 Form Ties and Form Anchors - Embedded ties for holding forms shall remain embedded and, except where F1 finish is permitted shall terminate not less than two diameters or twice the minimum dimension of the tie, whichever is greater, from the formed surfaces of the concrete. Where F1 finish is permitted, the ties may be cut off flush with the formed surfaces. The ties shall be constructed so that removal of the ends or end fasteners can be accomplished without causing appreciable spalling at the faces of the concrete. Recesses resulting from the removal of the ends of the ties shall be filled in accordance with Section 16.6, Cast-In-Place Concrete. Form anchors shall be provided in sufficient number, subject to approval by the Engineer, to ensure that concrete surfaces after stripping forms are within applicable tolerances. Form anchors embedded in concrete which are loosened prior to placement of adjoining concrete shall be replaced by other supports firmly embedded in the hardened concrete.
- 16.2.5 Cleaning and Oiling of Forms - At the time the concrete is placed in the forms, the surfaces of the forms shall be free from encrustations of mortar, grout or other foreign material. Before concrete is placed, the surfaces of the forms shall be coated with a form oil that will effectively prevent sticking and will not soften or stain the concrete surfaces, or cause the surfaces to become chalky or dust producing.
- 16.2.6 Removal of Forms - To facilitate satisfactory progress with the specified curing and enable earliest practicable repair of surface imperfections, forms shall be removed within 24 hours after the concrete has hardened, and specified repair and curing shall be commenced immediately thereafter. It is the Contractor's responsibility to use skilled and experienced workmen, and/or engineers to determine the concrete hardening that would prevent damage and injury when form is removed. It is the Contractor's responsibility to design and build adequate forms and to leave them in place until the forms can be safely removed. The Contractor shall be liable for damage and injury caused by removing forms before the concrete has gained sufficient strength. Forms on upper sloping faces of concrete, such as forms on the watersides of warped transitions, shall not be removed until the concrete has attained sufficient stiffness to prevent sagging. Any needed repairs or treatment required on such sloping surfaces shall be performed at once and be followed immediately by the specified curing.

To avoid excessive stresses in concrete that might result from swelling of forms, wood forms for wall openings shall be loosened as soon as the

loosening can be accomplished without damage to the concrete. Forms for the openings shall be constructed so as to facilitate such loosening. Forms shall be removed with care so as to avoid injury to the concrete and any concrete so damaged shall be repaired in accordance with Section 16.6.22 of Cast-In-Place Concrete.

16.3 Concrete Reinforcement - The Contractor shall detail, furnish, cut, bend, install and support reinforcing steel for concrete.

Related Sections -

- 16.2 Concrete Formwork
- 16.4 Waterstops
- 16.5 Joints and Edges in Concrete
- 16.6 Cast-In-Place Concrete
- 16.7 Concrete Placement Drawings
- 16.8 Weepholes

References -

American Concrete Institute (ACI):

- ACI 315 Details and Detailing of Concrete Reinforcement
- ACI 318-05 Building Code Requirements for Structural Concrete
- ACI 350-06 Standard Building Code Requirements for Environmental Engineering Concrete Structure

American Society for Testing and Materials (ASTM):

- ASTM A497 Specification for Welded Deformed Steel Wire Fabric for Concrete Reinforcement
- ASTM A615 Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

16.3.1 Contractor Submittals - All submittals for reinforcing steel shall be provided to the Engineer at least 21 days before delivering reinforcement materials to the jobsite in accordance with the requirements of this Section.

The Contractor shall submit reinforcement bar schedules complete with the quantity, shape, size, dimensions, unit weight, total weights, bending details and splice embedment details and dimensions.

The Contractor shall submit details of bar supports including types, sizes and support spacing and sequence and details of all manufactured items used in the work.

The Contractor shall submit complete placing details including sequence of placing, spacing of bars, dimensions indicating the required concrete cover, dimensions for lap lengths for splices and all other dimensions or details necessary for proper location of all reinforcing bars.

The Contractor shall submit certified test reports of reinforcing steel showing that the materials comply with the applicable specifications. Furnish reports for each steel shipment and identify with specific lots prior to use of the steel in the work.

- 16.3.2 Materials - Reinforcing steel shall be billet-steel bars conforming to ASTM A615, Grade 60, deformed bars, uncoated.

Steel Reinforcement Accessories:

- a. Bar Supports: Conform to ACI 315
- b. Wire Ties: 16-gauge or heavier black annealed wire

- 16.3.3 Installation of Reinforcing Steel - Reinforcing steel and accessories shall be installed or placed as specified and as shown on the Drawings. Placement details of reinforcement and accessories not specified or shown on the Drawings shall conform to ACI 315 or 318. Reinforcement shall be fabricated to shapes and dimensions shown, placed where indicated within specified tolerances and adequately supported during concrete placement. At the time of concrete placement, the Contractor shall ensure that all reinforcement is free from loose, flaky rust, scale (except tight mill scale), mud, oil, grease and all other coatings that might reduce the bond with the concrete.

Reinforcing steel shall be mill or field bent. All bars shall be bent cold unless otherwise authorized. Bars partially embedded in concrete shall not be field bent. All hooks and bends shall conform to ACI 318-05.

Placing Tolerances:

- a. Spacing of Bars: As indicated on the drawings or as otherwise directed.
- b. Concrete cover for reinforcement shall be in accordance with the following:

Surfaces cast against and permanently exposed to earth and rock 3 inches

Surfaces permanently exposed to backfill or water 2 inches

Splicing of bars at alternate or additional locations will be subject to approval. All splices shall conform to ACI 318-05, unless otherwise specified. Only lap-type splices with both bars securely wired together shall be used. Welded or mechanical butt splices will not be permitted.

16.4 Waterstops - The Contractor shall furnish and install Waterstops for joints in concrete as shown on the drawings.

Related Sections -

- 16.2 Concrete Formwork
- 16.3 Concrete Reinforcement
- 16.5 Joints and Edges in Concrete
- 16.6 Cast-In-Place Concrete
- 16.7 Concrete Placement Drawings
- 16.8 Weepholes

References -

American Concrete Institute (ACI):

ACI 301 Specifications for Structural Concrete for Buildings

16.4.1 Contractor Submittals - All submittals for Waterstops shall be provided in accordance with the requirements of this Section.

At least 21 days before installing Waterstop, the Contractor shall submit two (2) sets of manufacturer's instructions for making and installing Waterstop splices.

Prior to the shipment of Waterstops to the jobsite, the Contractor shall submit a copy of the following:

- a. Each manufacturer's certification covering all material requirements.
- b. For the polyvinyl chloride (PVC) waterstop, include all physical property test data on the compound used to fabricate the waterstops.
- c. For the expanding waterstops, include performance standard test data.

These tests shall have been performed by the manufacturer or other laboratory. The tests shall have been conducted no more than 18 months prior to the submittal. The Contractor shall be responsible for the accuracy of the

manufacturers' certifications. The certifications shall be identified with the manufacturer's product identification and the quantity ordered.

- 16.4.2 Waterstops (PVC) - Waterstops between contraction joints in stilling basin walls and training walls, as well as in the bottom slab shall be of minimum 9-inch preformed, dumbbell type waterstops fabricated of polyvinyl chloride (PVC) as specified, 9 inches wide x 3/8 inch thick, Style 751, and 12 inches wide x 3/8 inch thick, Style 755, manufactured by Greenstreak, 3400 Tree Court Industrial Boulevard, St. Louis, MO 63122, or approved equal. PVC Waterstops shall be capable of resisting a minimum water head of 150 feet.
- 16.4.3 Waterstops (Expanding Rubber) - Expanding rubber type waterstops will be required at joints where no other waterstops or filler is specified to avoid piping of the embankment and backfill materials. This waterstop shall be a hydrophilic rubber strip expanding type waterstop with embedded stainless steel net, approximately 3/4 inch wide by 3/8 inch thick, type MC-2010MN Adeka UltraSeal waterstop manufactured by Asahi Denka Kogyo K.K., Tokyo, Japan, and distributed by Mitsubishi International Corp., Post Office Box 459, Spearfish, SD 57783, or approved equal.
- 16.4.4 Joints - Joints shall be constructed at such locations and in accordance with the details indicated on the drawings and specified in Section 16.6, Cast-In-Place Concrete.
- 16.4.5 Waterstops Installation - Waterstops shall be located and installed where shown on the drawings and in accordance with ACI 301. Waterstops shall be kept clean and free of grease, oils, dirt and other contaminants which might damage the waterstop or prevent bonding. Waterstops shall be installed and supported in accordance with the manufacturer's written recommendations and in such a manner as to preclude being damaged or losing sealing integrity. PVC waterstops shall not be nailed in place nor shall edges be cut to pass around reinforcing. Field splices, where required, shall be made with the proper tools and shall incorporate recommended waterstop fitting and jointing in accordance with the manufacturer's written recommendations.

All waterstops shall be stored in as cool a place as practicable, preferably at 70°F or less, or as recommended by the manufacturer. Waterstops shall not be stored in the open, or where it will be exposed to the direct rays of the sun. All waterstops shall be subject to the approval of the Engineer.

Concrete surrounding the waterstops shall be given additional vibration, over and above that used for adjacent concrete placement, to assure complete embedment of the waterstops in the concrete. Larger pieces of aggregate near the waterstops shall be removed by hand during embedment to assure complete contact between the waterstop and the surrounding concrete.

Splices of waterstops shall be fabricated only by workmen who have demonstrated to the satisfaction of the Engineer that they are sufficiently skilled to fabricate the required splices.

Splices in the continuity or at the intersections of runs of PVC waterstops shall be performed by heat sealing the adjacent surfaces in accordance with the manufacturer's recommendations. A thermostatically-controlled electric heat source shall be used to make all splices. The correct temperature at which splices should be made will differ with the materials compounded, but should be sufficient to melt but not char the plastic material. All splices shall be neat with the ends of the joined waterstops in true alignment. A miter-box guide and portable saw shall be provided and used to cut the ends to be joined to ensure good alignment and contact between joined surfaces. The spliced areas, when cooled and bent by hand to as sharp an angle as possible, shall show no sign of separation.

16.5 Joints and Edges in Concrete - The Contractor shall furnish all labor, materials, equipment and incidentals for constructing joints and edges in concrete.

Related Sections -

- 16.2 Concrete Formwork
- 16.3 Concrete Reinforcement
- 16.4 Waterstops
- 16.6 Cast-in-Place Concrete
- 16.7 Concrete Placement Drawings
- 16.8 Weepholes

16.5.1 Joint Sealant - Elastomeric joint sealant will be Sikaflex-2c NS (non-sag) polyurethane conforming to Federal Specification TT-S-00227E, Type II, Class A, or approved equal. Joint sealant will be suitable for submergence underwater. The manufacturer's recommended preparation of joints will be followed and joint surfaces will be primed. Joint primer will be as recommended by the manufacturer of the sealant.

16.5.2 Joint Filler - Joint filler for expansion joints shall be sponge rubber filler conforming to ASTM D1752, Type 1, except the load required to compress the test specimen 50 percent of its thickness before testing shall be not less than 50 pounds per square inch nor greater than 150 pounds per square inch. Joint filler shall be concrete gray in color. Adhesive for securing sponge rubber in place shall be a non-bituminous adhesive as recommended by the manufacturer of the joint filler.

16.5.3 Construction Joints - Construction joints are shown on the Drawings and are purposely placed in structures to facilitate construction; to reduce initial shrinkage stresses and cracks; to allow time for the installation of embedded

metalwork; or to allow for the subsequent placing of other concrete, fill concrete, or second-stage concrete. Bond is required at construction joints regardless of whether or not reinforcement is continuous across the joint.

Additional construction joints or the relocation of construction joints will be subject to approval by the Engineer.

Construction joints shall be constructed in accordance with Section 16.6, Cast-In-Place Concrete.

- 16.5.4 Contraction Joints - Contraction joints, if required, are placed in concrete to provide for volumetric shrinkage of a monolithic unit or movement between monolithic units. The joints shall be constructed so that there will be no bond between the concrete surfaces forming the joint. Reinforcement shall not be continuous across a contraction joint.

Contraction joints shall be made by forming the concrete on one side of the joint and allowing it to set before concrete is placed on the other side of the joint. The surface of the concrete first placed at a contraction joint shall be coated with white wax-based curing compound in accordance with Section 16.6, Cast-In-Place Concrete before the concrete on the other side of the joint is placed.

- 16.5.5 Edges - The Contractor shall tool or chamfer concrete edges where shown on the Drawings or specified.

Where vertical construction joints occur in monolithic-concrete floors, the edges of the concrete on each side of the joint at the top of the floors shall be tooled neatly. At vertical joints between first-stage concrete and second-stage concrete, the edges of the first-stage concrete at the joints at the top of the floors shall be tooled neatly.

The outside edges of entrance slabs and stoops, curb edges, and other edges of concrete shall be finished neatly with an edging tool.

The radius of curvature of tooled edges shall be no greater than 1/4 inch, and shall be subject to approval by the Engineer.

- 16.6 Cast-In-Place Concrete - The Contractor shall furnish the ingredients and perform the mixing, placing, consolidating, finishing, curing, and other work required for construction of cast-in-place concrete in accordance with these Specifications.

The Contractor shall coordinate adjustments to the concrete outlines and furnish and install concrete embedded items as required.

Related Sections –

- 16.2 Concrete Formwork
- 16.3 Concrete Reinforcement
- 16.4 Waterstops
- 16.5 Joints and Edges in Concrete
- 16.7 Concrete Placement Drawings
- 16.8 Weepholes

References -

American Concrete Institute (ACI):

- ACI 117 Standard Tolerances for Concrete Construction and Materials
- ACI 214 Recommended Practice for Evaluation of Strength Test Results of Concrete
- ACI 301 Specification for Structural Concrete for Buildings
- ACI 304 Guide for Measuring, Mixing, Transporting and Placing Concrete
- ACI 305R Hot Weather Concreting
- ACI 306R Cold Weather Concreting
- ACI 309 Guide for Consolidation of Concrete
- ACI 311.4R Guide for Concrete Inspection
- ACI 318-05 Building Code Requirements for Structural Concrete

American Society for Testing and Materials (ASTM):

- ASTM C31 Practice for Making and Curing Concrete Test Specimens in the Field
- ASTM C33 Specification for Concrete Aggregate
- ASTM C39 Standard Method for Compressive Strength of Cylindrical Concrete Specimens
- ASTM C42 Standard Specification for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- ASTM C94 Standard Specification for Ready-Mixed Concrete
- ASTM C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates
- ASTM C138 Test Method for Unit Weight, Yield and Air Content (Gravimetric) of Concrete
- ASTM C143 Test Method for Slump of Portland Cement Concrete
- ASTM C150 Specification for Portland Cement
- ASTM C171 Specification for Sheet Materials for Curing Concrete
- ASTM C172 Method of Sampling Freshly Mixed Concrete
- ASTM C231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

| | |
|------------|---|
| ASTM C289 | Standard Specification for Potential Reactivity of Aggregates |
| ASTM C309 | Specification for Liquid Membrane-Forming Compounds for Curing Concrete |
| ASTM C311 | Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete |
| ASTM C494 | Specification for Chemical Admixtures for Concrete |
| ASTM C566 | Test Method for Total Moisture Content of Aggregate by Drying |
| ASTM C618 | Specifications for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete |
| ASTM C881 | Specification for Epoxy-Resin-Base Bonding Systems for Concrete |
| ASTM C1017 | Specification for Chemical Admixtures for Use in Producing Flowing Concrete |
| ASTM C1064 | Test Method for Temperature of Portland Cement Concrete |

Permission for deviation from any requirements mentioned herein or from the aforementioned standards shall be obtained from the Engineer in writing.

- 16.6.1 Contractor Submittals - All submittals for Cast-In-Place Concrete shall be provided to the Engineer twenty-one (21) days prior to placing concrete.

The Contractor shall submit the mix design for the concrete to the Engineer for approval for each mix.

The Contractor shall submit a quality control program for concrete work as specified below.

The Contractor shall submit certified laboratory results from sieve analysis tests performed in accordance with ASTM C136 for both the coarse and fine aggregates.

- 16.6.2 Quality Control - The Contractor is fully responsible for the quality of the work and for correction of concrete work which does not conform to the specified requirements, including strength, tolerances and finishes. The Contractor shall correct deficient concrete as required by these Specifications.

- 16.6.3 Portland Cement - Cement shall be Portland cement conforming to ASTM C150, Type II with alkali content not to exceed 0.6% (calculated as $\text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$).

Certifications and mill-test reports for each lot of cement from which shipments are drawn shall be made available upon request from the Engineer.

- 16.6.4 Aggregates - Fine aggregates shall conform to the requirements of ASTM C33 for fine aggregate.

Coarse aggregate for footings, invert slab and stilling basin outlet structure shall conform to ASTM C33, size 467. Coarse aggregate for all other concrete structures shall conform to ASTM C33, however, the maximum size of coarse aggregate may vary incrementally according to the conditions encountered in each placement or as may otherwise be directed by the Engineer. Coarse aggregate shall not contain any materials that are deleteriously reactive with the alkalis in the cement in an amount sufficient to cause expansion of the concrete as determined by ASTM C289.

- 16.6.5 Water - Water for washing aggregates and for mixing concrete shall be potable and shall be free from deleterious amounts of acids, alkalis, oils, organic materials or other foreign substances. If water is not potable, a chemical analysis of the water shall be performed by a testing laboratory designated by the Engineer. The costs for the chemical analysis shall be at the expense of the Contractor.

- 16.6.6 Ready-Mixed Concrete - Unless otherwise specified herein, the concrete shall comply with the "Standard Specification for Ready-Mixed Concrete", ASTM C94. Where conflicts exist between the above publication and these Specifications, the Engineer shall be notified and this Specification shall govern.

- 16.6.7 Admixtures - Admixtures shall be used provided the types and amounts used are approved by the Engineer.

Water reducing type admixtures shall conform to ASTM C494.

Retarding type admixtures shall conform to ASTM C494.

- 16.6.8 Fly Ash - Fly ash may be used with prior approval of the Engineer and shall be Type F, ASTM C618.

- 16.6.9 Materials Handling and Storage - All materials shall be handled and stored in such a manner as to prevent deterioration or intrusion of foreign matter.

All materials shall be handled and stored so as to produce a minimum amount of segregation.

Storage of aggregate on a natural ground surface will be permitted if the bottom six inches of the pile is discarded.

16.6.10 Proportioning of Mix - Concrete shall be homogenous, cohesive, readily placeable and uniformly workable. The proportioning of ingredients shall be such as to produce the necessary consistency, durability, strength and other required properties for the intended usage. All mix designs shall be in accordance with the "Building Code Requirements for Structural Concrete", ACI 318-05.

The mix design shall be developed in accordance with the "Specifications for Structural Concrete for Buildings", ACI 301, Section 3.9. The various mix designs shall be based upon the following criteria. The amount of fly ash is limited to a maximum of 15% by mass of total cementitious material.

**TABLE 16.6.10
PROPORTIONING OF MIX**

| Class | Min. Compressive Strength at 28 Days F'_c (psi) | Gradation Size No. ^{1/} | Coarse Aggregate Nominal Size Range | Max. Slump | Min. Slump | Max. W/C Ratio (by Weight) |
|---|--|---|--|-------------------|-------------------|-----------------------------------|
| Use: Class A Structural Concrete for intake structure, outlet headwall, pipe concrete cradle, stilling basin, spillway, walls, junction structure and concrete drop inlets | | | | | | |
| A | 4,000 | 67 | 1½" to No. 4 | 4" | 3" | 0.50 |
| Use: Class B Cutoff Walls, V-Ditch and Miscellaneous Concrete not otherwise specified | | | | | | |
| B | 3,000 | 67 | 1" to No. 4 | 4 | 3 | 0.5 |
| Use: Class C Concrete Grout for rock riprap or slope protection and for Grouted No. 2 backing | | | | | | |
| C | 2,000 | 67 | ¾" to No. 8 | 8" | 6" | 0.6 |

For dental, backfill and lean concrete, see Section 16.6.23 of this Section.

^{1/} Gradation size numbers in accordance with "Standard Specification for Concrete Aggregates", ASTM C33, Table 2.

No change in the source, character or gradation of materials shall be made without approval of the Engineer. The Contractor shall assign mix design ID numbers to each mix type. These mix design IDs shall not be changed without prior written authorization from the Engineer.

16.6.11 Mixing of Concrete - Mixing of concrete at the plant site shall follow procedures in the "Standard Specification for Ready-Mixed Concrete", ASTM C94. Each plant to be used shall hold a current certification meeting the National Ready-Mix Concrete Association requirements.

- 16.6.12 Delivery - Ready-mix concrete shall be produced and delivered in conformance with the "Standard Specification for Ready-Mixed Concrete", ASTM C94, as applicable, with the following limitations. Concrete that has contained its mixing water for more than 90 minutes, or has achieved a temperature of 90°F or higher, or has attained its initial set upon arrival at the jobsite, as determined by the Engineer, will be rejected.

During transportation for delivery, the drum should have a minimum of 70 revolutions in total and a maximum of 250 revolutions in total to provide sufficient agitation to the concrete mix while transported to the project site.

Batch out time of trucks shall be indicated on the delivery tickets at the concrete plant. A copy of the delivery ticket shall be given to the Engineer at the time of delivery. Concrete deliveries without the batch out time indicated on the delivery ticket will be rejected by the Engineer.

16.6.13 Testing, Strength Compliance and Acceptance of Concrete -

16.6.13.1 Testing -

- a. The Engineer will, at his discretion, require concrete samples from which test cylinders will be formed. The samples shall be taken directly from the transit mix trucks. Beginning with the first concrete truck and for every consecutive 30 cubic yards delivered (prior to placement); the concrete temperature and slump shall be measured, and six cylinders shall be cast for compression testing.
- b. Concrete will be tested by the Engineer. The activities of the Engineer shall in no way relieve the Contractor of the responsibility to furnish materials and construction in full compliance with the Specifications. The Contractor shall perform those tests as required to document compliance with the Specification requirements.
- c. Concrete sampling for tests and cylinder making shall be done in accordance with ASTM C172.
- d. Slump tests shall be performed in accordance with ASTM C143.
- e. Additional concrete tests may be conducted, as required by the Engineer.

- f. Concrete compression specimens shall be made in accordance with ASTM C31, with the test specimens being 6" x 12" cylinders.
- g. The Engineer may, at his discretion, require a representative sample of the sand and coarse aggregate be made available at the ready-mix plant for a sieve analysis.
- h. The Contractor shall provide access to the plant for inspection of materials and equipment used in the concrete, upon request from the Engineer.

16.6.13.2 Potentially Low-Strength Concrete -

- a. Defined as concrete whose 7-day break is less than 70% of the specified minimum 28-day compressive strength.
- b. Potentially low-strength concrete shall remain accessible with no other work performed that relates to, or depends upon, the questionable concrete until a final decision as to the disposition of the concrete is made by the Engineer.

16.6.13.3 Compliance with Strength Provisions - If the strength of the 7-day test is less than 70% of the minimum 28-day compressive strength, the Contractor may at its discretion and expense, with approval from the Engineer, take a minimum of three field cores on the 15th day after placement of the potentially low-strength concrete. Within 24 hours, the Contractor shall have a laboratory, designated by the Engineer, test these cores in accordance with ASTM C42. The potentially low-strength concrete shall be accepted if the average of the core tests is 85% or greater of the specified 28-day compressive strength.

16.6.13.4 Acceptance of Concrete -

- a. The Engineer may conduct a current statistical evaluation of the concrete quality in accordance with the "Recommended Practice for Evaluation of Strength Test Results of Concrete", ACI 214. The evaluation shall begin when five sets of 7- and 28-day tests have been performed.

- b. Should the statistical data indicate an unacceptable combination of average strength and standard deviation, the Contractor shall take immediate corrective action.
- c. Concrete not meeting these Specifications will be rejected by the Engineer.

16.6.14 Hot Weather Concreting - During any combination of high temperature, low relative humidity, and wind velocity which will tend to impair the quality of fresh or hardened concrete, increased diligence and coordination shall be used in minimizing mixing and delivery times, and water contents. It is recognized that during hot weather the rate of slump loss is increased; however, in no case shall the maximum water to cement ratio for a given concrete strength be exceeded to achieve the specified slump.

Admixtures to reduce water requirements or to retard the setting time of the concrete shall be used only with written approval of the Engineer.

The Contractor shall conform to "Hot Weather Concreting", ACI 305R, as required to ensure that the concrete temperature at the time of placement is below 90°F.

16.6.15 Cold Weather Concreting - The Contractor shall conform to "Cold Weather Concreting," ACI 306R.

16.6.16 Tolerances for Concrete Construction - The intent of this Section is to establish tolerances that are consistent with modern construction practice, yet are governed by the effect that permissible variations may have upon a structure. The Engineer reserves the right to diminish the tolerances set forth herein if such tolerances impair the structural integrity, operational function or architectural appearance of a structure or portion thereof.

Allowable variations from specified lines, grades and dimensions are the recommended permissible variations in ACI 117, "Standard Tolerances for Concrete Construction and Materials".

Allowable magnitudes for concrete surface irregularities are given in Section 16.6.19, Finishes and Finishing, herein.

The Contractor shall be responsible for finishing the concrete and for setting and maintaining concrete forms to ensure that the completed work will be within the tolerances specified. Concrete work that exceeds the tolerance limits specified shall be remedied as approved by the Engineer.

16.6.17 Preparations for Placing -

16.6.17.1 General -

- a. No concrete shall be placed until all formwork, installation of items to be embedded and preparation of surfaces involved in the placement have been approved.
- b. All surfaces of forms and embedded materials shall be free from curing compound, dried mortar from previous placements and other foreign substances before the adjacent or surrounding concrete placement is begun.
- c. Prior to beginning concrete placement, the Contractor shall make ready a sufficient number of properly operating vibrators and operators, and shall have readily available additional vibrators to replace defective ones during the progress of the placement. The Engineer may require that the Contractor delay the start of the concrete placement until the number of working vibrators available is acceptable.

16.6.17.2 Inspection Prior to Placing Concrete - Prior to the placing of any concrete, the "Concrete Pour Card" (Appendix "F") shall be used to document inspections and acceptance of the placement area by the Engineer. The pour card shall show the name of the Project, the specific limits of the placement, the concrete mix to be used, the time placement started and was completed, and traceability data for identification of the batching and testing records.

16.6.17.3 Foundation Surfaces -

- a. Foundation surfaces upon or against which concrete is to be placed shall be free from frost, water, mud and debris.
- b. Rock surfaces shall be free from oil, objectionable coatings, and loose, semi-detached and unsound fragments. Immediately prior to placement of concrete, surfaces of rock shall be washed with an air-water jet and shall be brought to a uniform surface-dry condition.
- c. Foundation subgrade shall be damp when concrete is placed against it. Surfaces shall be thoroughly moist,

but not muddy, to a depth of 6 inches, or to impermeable material, whichever is less.

16.6.17.4 Construction Joints -

- a. All construction joints shall be roughened and all laitance removed in preparation for placing adjoining concrete. Methods of roughening surfaces and removing laitance may include mechanical abrasion, wet sandblasting (sandblasting is preferred) or high-pressure water jetting of hardened (not green) concrete. Water jetting will normally be at pressures of at least 6,000 pounds per square inch. All methods are subject to the approval of the Engineer. Construction joints shall be thoroughly cleaned of loose or defective concrete, coatings, sand, curing compound and other foreign material on the surface.
- b. After this initial cleanup and at the last opportunity prior to placing concrete, the concrete surface shall be thoroughly washed with water or air-water jets, and shall be moist, but not wet when covered with fresh concrete.

16.6.17.5 Epoxy Bonding Adhesive - The Contractor shall apply epoxy bonding adhesive where shown on the Drawings or when directed by the Engineer. The application of epoxy bonding adhesive shall be in accordance with the manufacturer's instructions.

16.6.18 Placing -

16.6.18.1 General -

- a. The Contractor shall notify the Engineer at least 72 hours in advance before batching begins for placement of concrete. Upon receiving notification, the Engineer will give a 72-hour notice to the DSOD about the scheduled concrete placement. Unless inspection is waived for that specific placement, placing shall be performed only in the presence of the Engineer. Placement shall not begin until all preparations are complete and approval from the Engineer and DSOD are obtained.

- b. All surfaces upon or against which concrete is to be placed shall be prepared in accordance with Section 16.6.17 Preparations for Placing, herein.
- c. Re-tempering of concrete will not be permitted. Concrete that has become so stiff that proper placing cannot be assured shall be wasted. Concrete used to prime pumps shall be wasted.
- d. Concrete shall not be placed in standing water except with written permission from the Engineer, and the method of placing shall be subject to approval. Concrete shall not be placed in running water, and shall not be subjected to running water until after the concrete has hardened.
- e. Concrete shall be deposited as nearly as practical in its final position and shall not be allowed to flow in such a manner that the lateral movement will cause segregation of the coarse aggregate from the concrete mass. Methods and equipment employed in depositing concrete in forms shall minimize clusters of coarse aggregate. Clusters that occur shall be scattered before the concrete is vibrated.
- f. Forms shall be constantly monitored and their position adjusted as necessary during concrete placement.
- g. All concrete shall be placed in approximately horizontal layers. The depths of an initial lift shall be no more than 18 inches and each subsequent lift shall be no more than 12 inches. The Engineer reserves the right to require lesser depths of layers where concrete cannot otherwise be placed and consolidated in accordance with the requirements of these Specifications. Exposed construction joints shall be made straight and level or plumb except as shown otherwise on the Drawings. Concrete drop heights shall not exceed 4 feet.
- h. Except as shown otherwise on the Drawings, construction joints intersecting sloping exposed concrete surfaces shall be inclined near the exposed surface to prevent feather edges. The angle between such an inclined surface and the form shall be not less than 50° nor more than 130° , and that surface angle shall extend into the concrete member for at least 3 inches.

- i. To facilitate consolidation and bond at construction joints, structural concrete immediately above the joint shall be vibrated with twice as much time and effort as normally needed for concrete of that consistency.
- j. In placing concrete on unformed slopes so steep as to make internal vibration of the concrete impractical without forming, the concrete shall be placed ahead of a non-vibrating slip-form screed extending approximately 2-1/2 feet back from its leading edge. Concrete ahead of the slip-form screed shall be consolidated by internal vibrators so as to ensure complete filling under the slip-form.
- k. Cold joints are undesirable and should be avoided. However, in the event of equipment breakdown or other unavoidable prolonged interruption of continuous placing when it appears that unconsolidated concrete may harden to the extent that later vibration will not fully consolidate it, the Contractor shall immediately consolidate such concrete to a stable and uniform slope. If delay of placement is then short enough to permit penetration of the underlying concrete, placement shall resume with particular care being taken to thoroughly penetrate and revibrate the concrete surface placed before the delay. If concrete cannot be penetrated with a vibrator, the cold joint shall then be treated as a construction joint if the design requirements are such that a construction joint is practical. If a construction joint will impair the structural integrity, as determined by the Engineer, the concrete shall be repaired as determined by the Engineer. Repairs in some instances will include removal of all or a portion of the previously placed concrete and the Contractor will not be entitled to any payment for such work.

Care shall be taken to prevent cold joints when placing concrete in any part of the work. The concrete-placing rate shall ensure concrete is placed while the previously placed, adjacent concrete is plastic so that the concrete can be made monolithic by normal use of the vibrators.

- l. Concrete shall not be placed in rain sufficiently heavy or prolonged to wash mortar from concrete. Under such conditions, the placing area shall immediately be

covered and protected or the placement shall be stopped as approved by the Engineer.

- m. The Contractor shall be entitled to no additional payment, over the prices stated in the Bid Schedule for concrete, by reason of any limitations in the placing of concrete required under the provisions of this Section.

16.6.18.2 Transportation -

- a. Concrete shall be deposited in its final position in the placement within 90 minutes after the introduction of the mix water and cementitious materials into the mixer. In the case where retarder has been added, this limitation may be waived if the concrete is of such slump after the 90-minute time limit that it can be satisfactorily placed without the addition of water. Furthermore, a time limit less than 90 minutes may be invoked during hot weather or under conditions contributing to quick stiffening of the concrete. The methods and equipment used for transporting concrete from the batch plant and the elapsed time during transportation shall not cause measurable segregation of coarse aggregate or slump loss exceeding 2 inches.
- b. Concrete shall be deposited as near as practical to its final position by use of buckets, chutes, conveyors, or concrete pumps. The use of aluminum pipe or aluminum chutes for delivery of concrete will not be permitted. Concrete buckets shall be capable of promptly discharging concrete of the specified mix design, and the dumping mechanism shall be capable of discharging, at one location, repeated small portions of concrete from a full bucket. Buckets and conveyors shall be designed for attaching drop chutes or tremies which shall be used to deposit concrete whenever the concrete must be dropped more than 5 feet from the bucket to the placing surface.
- c. Concrete pumps shall be equipped with slicklines having a minimum diameter of 5 inches. Pumps and slicklines shall be capable of transporting concrete containing a maximum amount of coarse aggregate and a minimum amount of sand, cement, and water. The pump tremie shall be of adequate length to avoid exceeding a 4-foot freefall drop height.

- d. Buckets, chutes, hoppers, pumps, transit mix trucks, and other equipment shall readily handle and place concrete of the specified slump. The Contractor shall, when directed, replace inadequate transporting equipment with acceptable equipment.

16.6.18.3 Consolidation -

- a. Concrete shall be consolidated by vibration. The vibration shall be sufficient to remove all undesirable air voids from the concrete, including the air voids trapped against forms and construction joints. Close attention and additional effort may be required to adequately consolidate concrete adjacent to construction joints and sloping surfaces. Such close attention and additional effort required to consolidate concrete adjacent to construction joints and sloping surfaces shall be at no additional cost. All concrete shall be vibrated in a systematic manner and such that the radius of action of the vibrator overlaps previous vibrated concrete. No additional concrete shall be placed until the previously placed layer has been thoroughly vibrated. After consolidation, the concrete shall be free of rock pockets and honeycomb areas, and shall be closed snugly against all surfaces of forms, construction joints, and embedments.
- b. Except as hereinafter provided, consolidation of all concrete shall be by immersion-type vibrators. Vibrators shall be adequate in size, power, and number to quickly and effectively consolidate the concrete according to the rate of concrete placement. Immersion-type vibrators shall be operated in nearly vertical position and the vibrating head shall penetrate and re-vibrate the concrete in the upper portion of the underlying layer. Vibrators shall be inserted such that they quickly penetrate the layer under the action of their own mass and shall be withdrawn slowly such that the entrapped air is removed. Care shall be exercised to avoid contact of the vibrating head with embedded items and with formed surfaces which will later be exposed to view.
- c. Immersion-type vibrators shall be 3 to 6 inches in diameter and operated at speeds of at least 7,000