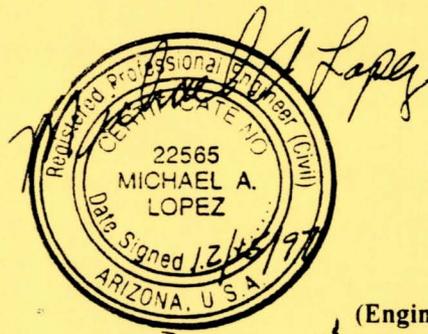


CONSTRUCTION SPECIFICATIONS

FOR

CONTRACT FCD 97-33
Old Cross Cut Canal, Phase 4

C. 69-98-033-5



(Engineer's
Seal)

Prepared For

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Recommended by: Edward A. Raleigh Date: 12/16/97
Edward A. Raleigh, P.E., Manager
Engineering Division

Issued for Public Bidding by: M. S. Ellegood Date: 12/17/97
Michael S. Ellegood, P.E.
Chief Engineer and General Manager

SUPPLEMENTARY TO MARICOPA ASSOCIATION OF GOVERNMENTS UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EDITION OF 1992 AND REVISIONS AND SUPPLEMENTS THERETO.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**Old Cross Cut Canal, Phase 4****Contract FCD 97-33
ADDENDUM NO. 1****January 29, 1998****Contract FCD 97-33****To Contract Documents****Title: Old Cross Cut Canal, Phase 4****Owner: Flood Control District of Maricopa County**

This Addendum No. 1 modifies or clarifies Contract FCD 97-33. All other provisions of the contract remain unchanged unless specifically modified herein. The Addendum No. 1 forms a part of the Contract Documents and modifies them as follows:

I. Revisions to Bidding Schedule

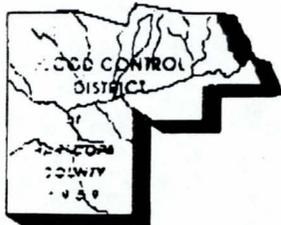
1. Change the quantity for Bid Item 301-1 - SUBGRADE PREPARATION UNDER PAVEMENT from 7,401 SY to 10,485 SY. Bidders are to write the new quantity on the bid schedule in the appropriate bid item Approximate Quantity column location.
2. Change the quantity for Bid Item 206-1 - GEOCOMPOSITE DRAIN from 4,121 SY to 4,687 SY. Bidders are to write the new quantity on the bid schedule in the appropriate bid item Approximate Quantity column location.
3. The following existing bid items shall be bid as "Add-Alternate" bid items:
Bid Item 310-1 - AGGREGATE BASE COURSE
Bid Item 321-1 - ASPHALT CONCRETE PAVEMENT C-3/4
Bid Item 340-4 - 6" x 6" CONCRETE EDGING
4. For Bid Item 301-1 - SUBGRADE PREPARATION UNDER PAVEMENT; of the total revised quantity of 10,485 SY, 3,084 SY shall be bid as an "Add-Alternate" bid item.
5. The Owner may elect to delete the four "Add-Alternate" bid items prior to the award of the contract. However, the extended amounts for each of the "Add-Alternate" bid items shall be included in the total bid amount and used in the determination of the lowest total bid amount.

II. Revisions to Supplementary General Conditions

6. Delete Subsection 103.6.2 in its entirety.

III. Revisions to Special Provisions

Not applicable to this Addendum.



FLOOD CONTROL DISTRICT

of

Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5859

BOARD OF DIRECTORS
Betsey Bayless
Jan Brewer
Fulton Brock
Don Stapley
Mary Rose Garrido Wilcox

DATE: January 27, 1998
MEMO TO: Planholders and Attendees (see attachment)
FROM: Shelby Brown
SUBJECT: Old Cross Cut Canal, Phase IV, FCD 97-33, Pre-bid Meeting

Don Rerick, Project Manager, discussed the location of and described the project, which is located within the City of Phoenix along 48th Street and the Old Cross Cut Canal, from Osborn Road to Indian School Road.

The project is approximately 2,505 linear feet of double box culvert. Also included is the reconstruction of the 48th Street pavement, curb, gutter, and signalization as well as the installation of the SRP ductbank. Mr. Rerick emphasized that SRP has a separate set of plans and specifications. The contractor must attend a pre-construction meeting with SRP to coordinate construction activities.

Mr. Rerick also verified that the primary contractors who were in attendance at the pre-bid meeting at the District office had also been in attendance at the mandatory site visit.

Heidi Birch, Contracts Branch Manager, discussed the MBE/WBE participation for this project, which is 10%. Ms. Birch also outlined Subsection 103.6 of the Supplementary General Conditions which requires a statement, with the bid, from the Contractor's insurance company that certifies the Contractor will be able to provide the required insurance.

Mr. Rerick discussed the concern that there is ground water and surface water in the canal. There are also storm drains that drain without any type of control into the canal. The Contractor must also be aware that storm water may be present as well as water diverted by a gate structure from the Arizona Canal. The District will monitor the quality of groundwater. As part of this process, the Contractor will be required to submit a Health and Safety Plan with their bid.

Mr. Rerick also provided information regarding the relocated utilities along the east side of the canal. SRP has moved overhead lines to underground from Weldon Avenue south. The specifications require the Contractor to verify the location of underground utilities before digging.

Mr. Rerick advised that there are specific directions in the specifications regarding the detour of Indian School Road in Subsection 401.5.1 of the Special Provisions. The Contractor will be responsible for protecting in place the Safeguard Security Company building. In addition, Mr. Rerick emphasized the maximum of 120 days to utilize the detour.

Old Cross Cut Canal, Phase IV - FCD 97-33
Pre-bid Meeting
January 27, 1998
Page 2

Mr. Rerick stated that the contractor has the right to use the paved driveway north of Indian School Road. Specifications require that the Contractor repair any damages caused by their use. The Contractor must notify the funeral home of construction activities within the area of Indian School Road.

The Contractor work area used during Phase II of this project will be available for this phase. The parcel at the northwest corner of 48th Street and McDowell Road may be available. The City of Phoenix has indicated that a residential property located south of the orange grove, known as the "Forte" property may be used. However, noisy construction activity will not be permitted. The only activity allowed will be the storage of materials. Written approval from the City of Phoenix will be required. The contractor may call Dennis Althoff of the City of Phoenix at 262-7219 for further information.

Two overhead crossings will be maintained--one at the well site and one at the alley alignment south of Indian School Road. Southwest Gas has a line at Weldon that must be relocated before the start of construction.

Mr. Rerick stressed the importance of communications with SRP. The Contractor must also submit periodic groundwater pumping numbers to the District that will then be reported to ADWR in connection with a groundwater permit.

Roy Alvarado of the City of Phoenix advised that the relocation of a 2" gas line at 48th Street and Indian School will be done while the Contractor is at the location. US West has finished their relocation activities. In addition, all overhead poles between Indian School Road and Osborn should be removed within the next 2 weeks. The Contractor will work with Southwest Gas during construction to relocate the 2" gas line at Indian School. The City of Phoenix will compensate Southwest Gas.

Questions

Gene Washington of PCL Constructors asked if the utilities at Indian School need to be supported in place or relocated. Mr. Rerick answered that this is between the Contractor and the appropriate utility company.

Mark Eklund of Hunter Contracting asked if native backfill is acceptable. Mr. Rerick answered that there are 2 types of backfill specified in section 206 of the Special Provisions. Mr. Rerick further indicated that the existing material on the west side of the canal will be gone before the construction on this phase begins. There will be a similar requirement to do mounding north of Osborn to meet City of Phoenix conditions.

Mr. Rerick announced that an Addendum will be available Friday, January 30th. He also reminded those in attendance that in accordance with Page 1 of the Invitation for Bid, all questions or items for clarification be addressed to the Contract Manager, in writing, at least five (5) days prior to the bid opening date.

Ron Hallquist of Kiewit Western stated that a Contractor could deliberately bid the alternate bid items for a penny apiece and add the actual cost into other items in the bid. This could create a subsidy for the City. Ms. Birch answered that a materially unbalanced bid is grounds for rejection. Mr. Rerick added

Old Cross Cut Canal, Phase IV – FCD 97-33

Pre-bid Meeting

January 27, 1998

Page 3

that the District has included alternate bid items in other contracts, and was successful in obtaining reasonable bids.

Gene Washington of PCL Constructors noted that the GEOComposite drain quantity appears to be low. Mr. Rerick answered that the District will look at that. Any necessary correction will appear in the Addendum.

Dennis White of Tiffany Construction asked if the District provides survey benchmarks. Mr. Rerick answered that two (2) benchmarks will be provided—one at Indian School and the other at Thomas. There will be another project control at 44th Street and McDowell. Subsection 105.8 of the Supplementary General Conditions provides further information. Mr. Rerick added that the District will not lay out a control line.

Prior to the pre-bid meeting, the following questions concerning the large stockpile of material on Phase IV right-of-way were received from James Patton of PCL Civil Constructors:

1. Will it be removed prior to the Start of Phase IV? District answer: Yes
2. Will it be available for use in Bid Item 211-1 Fill Construction? District answer: No
3. What is the estimate quantity of material? District answer: Refer to the Bidding Schedule, item 211-1.

MANDATORY SITE VISIT

SITE VISIT
ATTENDANCE ROSTER

FCD 97-33, Old Cross Cut Canal, Phase 4

Date: January 27, 1998

FIRM NAME	PRINT NAME	SIGNATURE	Mark with (X) where applicable			
			Prime	Sub	Supplier	Other
F. H. BLANK & Sons, Inc.	David Johnson	<i>[Signature]</i>	X			
ARCHON INC	ERIC ARTHUR	<i>[Signature]</i>	X			
PCL CONSTRUCTORS	GENE WASHINGTON	<i>[Signature]</i>	X			
Meadow Valley Contractors	BILLY JONES	<i>[Signature]</i>	X			
Tiffany	Dennis White	<i>[Signature]</i>	X			
Hunter Contracting	MARK EKLUW	<i>[Signature]</i>	X			
Ames Construction	James Burke	<i>[Signature]</i>	X			
Ames Construction	BROD HILL	<i>[Signature]</i>	X			
Kiewit Western	RON HALLOUIST	<i>[Signature]</i>	X			
CITY OF PHOENIX	ROY ALVARADO	<i>[Signature]</i>				✓

01/30/98
11:21
NO. 292
087

CONSTRUCTION SPECIFICATIONS

FOR

CONTRACT FCD 97-33
Old Cross Cut Canal, Phase 4



(Engineer's
Seal)

Prepared For

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Recommended by: Edward A. Raleigh Date: 12/16/97
Edward A. Raleigh, P.E., Manager
Engineering Division

Issued for Public Bidding by: M. S. Ellegood Date: 12/17/97
Michael S. Ellegood, P.E.
Chief Engineer and General Manager

SUPPLEMENTARY TO MARICOPA ASSOCIATION OF GOVERNMENTS UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EDITION OF 1992 AND REVISIONS AND SUPPLEMENTS THERETO.

ATTENTION

ALL PROSPECTIVE BIDDERS

A.R.S. Section 34-201 requires that construction bid proposals be accompanied by a certified check, cashiers check or surety bond for **ten percent (10%)** of the total amount of the bid.

All bonds must be executed solely by a surety company or companies holding a Certificate of Authority to transact surety business in Arizona, issued by the Director of the (State) Department of Insurance.

Bonds (bid, payment and performance) executed by an individual surety or sureties are not in compliance with the Arizona Revised Statutes. Bids received containing bid bonds not in compliance with the Arizona Revised Statutes will be considered as being non-responsive. The use of District-supplied bond forms is required.

Please submit your bids accordingly.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CONTRACT FCD 97-33

Old Cross Cut Canal, Phase 4

TABLE OF CONTENTS

	Page
1. Invitation for Bids	1
2. Bid Form (Proposal)	4
3. Bidding Schedule	6
4. Subcontractor Listing	11
5. Surety Bond	12
6. No Collusion Affidavit	13
7. Verification of License	14
8. Minority and Women-Owned Business (MBE/WBE) Program	15
9. Contractor Certificate of Good Faith	19
10. MBE/WBE Assurances Affidavit	21
11. MBE/WBE Participation Affidavit, Sample	22
12. MBE/WBE Participation Report (Form)	23
13. Contract Agreement	24
14. Statutory Payment Bond	27
15. Statutory Performance Bond	28
16. Indemnification and Insurance Requirements	29
17. Certificate of Insurance	32
18. Supplementary General Conditions (SGC)	21 pages
19. Special Provisions (SP)	30 pages
20. Appendix "A"	9 pages
21. Appendix "B"	5 pages
22. Appendix "C"	3 pages
20. Drawings: Name of project here (Separate)	(61 plan sheets)



(Area to left reserved for Engineer's Seal)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

INVITATION FOR BID

BID OPENING DATE: February 5, 1998

LOCATION:

This project is located in Phoenix along 48th Street and the Old Cross Cut Canal, from Osborn Road to Indian School Road.

PROPOSED WORK:

The proposed work includes the reconstruction of 2,505 feet of the existing canal as a double concrete box culvert, and associated surface drainage features such as inlets and spillways, and the reconstruction of 48th Street from Osborn Road to Indian School Road with associated storm drains.

BIDS:

SEALED BIDS for the proposed work will be received by the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009 until 2:00 p.m. (Phoenix time) on the February 5, 1998, at which time they will be publicly opened and read. All bids are to be marked in accordance with Section 102.9 of the MAG Uniform Standard Specifications and addressed to the Chief Engineer and General Manager, Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009. Bids received after the time specified for bid opening will be rejected. All bids must be submitted on proposal forms furnished by the Flood Control District and included in the Proposal Pamphlet. The Board of Directors reserves the right to reject any and all bids and to waive any informality in any bid received.

ELIGIBILITY OF CONTRACTOR:

The bidder shall be required to certify that it has the appropriate "A" Contractor's license in the State of Arizona to perform the before-mentioned type of work. Certification shall be on the form provided herein.

The bidder may be required to furnish an affidavit as evidence of previous satisfactory performance in the above-mentioned type of work.

MANDATORY SITE VISIT AND PRE-BID CONFERENCE:

A **Mandatory Site Visit and Pre-Bid Conference** will be held on January 27, 1998. The site visit will be held at 9:00 a.m. at Osborn Road and the Canal at 48th Street. The Pre-Bid Conference will immediately follow the site visit and will be in the Flood Control District New River Conference Room, 2801 West Durango Street, Phoenix, Arizona. All contractors submitting bids are required to attend both the site visit and the pre-bid conference. Please be prepared at that time to submit in writing and discuss any comments concerning this solicitation.

Questions or items for clarification may be addressed to the Contract Manager, in writing, at least five (5) days prior to bid opening date. Questions received after this deadline may not be accepted. Responses to all questions submitted will be sent to all planholders by addenda. Verbal

interpretations, unless specifically addressed by addendum, shall not be binding nor have any legal effect.

CONTRACT TIME:

All work on this Contract is to be completed within three hundred thirty (330) calendar days after date of Notice to Proceed.

MBE/WBE PARTICIPATION:

It is the policy of the Flood Control District of Maricopa County to ensure in every way possible that minority and women-owned business enterprises have every opportunity to participate in providing professional services, purchased goods, and contractual services without being discriminated against on the grounds of race, religion, sex, age, disability, or national origin.

For this contract, a goal of ten (10) percent MBE/WBE is established for Minority/Women-Owned Business Enterprises. Instructions and required forms are included in the Minority and Women-Owned Business Enterprise Program Contracting Requirements section. The Maricopa County Minority and Women-Owned Business Enterprise Program, effective January 1, 1992, is incorporated by reference.

PROJECT PLANS, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS:

Plans and Construction Specifications may be obtained from the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009 upon payment of \$37.00 by check, payable to the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY. This payment will not be refunded. Mail orders for project documents must include an additional \$7.50 for first class U.S. postage and handling. The total \$42.50 will not be refunded. Regardless of circumstances, we cannot guarantee mail delivery.

Each bid must be accompanied by a Bid Bond executed on the District-supplied bond form, cashier's or certified check or postal money order equal to 10 percent (10%) of the bid, made payable to the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY as a guarantee that if the work is awarded to the bidder, the bidder will within ten (10) days of receipt of the Proposal Acceptance, enter into proper contract and bond condition for the faithful performance of the work, otherwise, said amount may be forfeited to the said BOARD OF DIRECTORS.

PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

QUANTITY	UNIT	DESCRIPTION
850	LF	Double 12'x10' Concrete Box Culvert
1,655	LF	Double 10'x10' Concrete Box Culvert
3,265	TONS	Asphalt Concrete Pavement
5,836	LF	Concrete Curb and Gutter
9,399	SF	Concrete Paving Stone
280	SF	Water Line
263	LF	RGRCP Pipe

BID

TO THE BOARD OF DIRECTORS
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PHOENIX, ARIZONA

Gentlemen:

The following Bid is made for Old Cross Cut Canal, Phase 4, FCD 97-33, in the County of Maricopa, State of Arizona.

The following Bid is made on behalf of

KIEWIT WESTERN CO.

and no others. Evidence of authority to submit the bid is herewith furnished. The bid is in all respects fair and is made without collusion on the part of any person, firm, or corporation mentioned above, and no member or employee of the Board of Directors is personally or financially interested, directly or indirectly, in the bid, or in any purchase or sale of any materials or supplies for the work in which it relates, or in any portion of the profits thereof.

The Undersigned certifies that the approved Plans, Supplementary General Conditions, Special Provisions, Forms of Contract, Bonds, and Sureties authorized by the Board of Directors and constituting essential parts of the bid, have been carefully examined and also that the work site has been personally inspected.

The Undersigned declares that the amount and nature of the work to be done is understood and that at no time will misunderstanding of the Plans, Construction Specifications, Special Provisions, Supplementary General Conditions, or conditions to be overcome, be pled. On the basis of the Plans, Construction Specifications, Special Provisions, Supplementary General Conditions, the Forms of Contract, Bonds, and Sureties proposed for use, the Undersigned proposes to furnish all the necessary machinery, equipment, tools, apparatus, and other means of construction, to do all the work and to furnish all the materials in the manner specified and to finish the entire project within the time hereinafter proposed and to accept, as full compensation therefore, the sum of various products obtained by multiplying each unit price, herein bid for the work or materials, by the quantity thereof actually incorporated in the complete project, as determined by the Engineer or Architect.

The Undersigned understands that the quantities mentioned herein are approximate only and are subject to increase or decrease and hereby proposes to perform all quantities of work, as either increased or decreased, in accordance with the provisions of the Specifications, at the unit price bid in the Bidding Schedule.

The Undersigned further proposes to perform all extra work that may be required on the basis provided in the Specifications and to give such work personal attention and to secure economical performance.

The Undersigned further proposes to execute the Contract Agreement and furnish satisfactory Bonds and Sureties within ten (10) days of receipt of Notice of Bid acceptance, **TIME BEING OF THE**

ESSENCE. The Undersigned further proposes to begin work as specified in the Contract attached hereto, and to complete the work within three hundred thirty (330) calendar days from the effective date specified in the Notice to Proceed, and maintain at all times a Payment and Performance Bond, approved by the Board of Directors, each in an amount equal to one hundred percent of the contract amount. This Bond shall serve not only to guarantee the completion of the work on the part of the Undersigned, but also to guarantee the excellence of both workmanship and material and the payment of all obligations incurred, said Bonds and Sureties to be in full force and effect until the work is finally accepted and the provisions of the Plans, Specifications, and Special Provisions fulfilled.

A bid bond in the amount and character named in the Invitation to Bid, and amounting to not less than ten (10) percent of the total bid, is enclosed. The bid bond is submitted as a guaranty of good faith that the Bidder will enter into a written contract to do the work, as provided, if successful in securing the award thereof. It is therefore agreed that if the Undersigned withdraws its bid at any time except as herein provided or if the bid is accepted and the Undersigned fails to execute the Contract and furnish satisfactory Bonds and Sureties as herein provided, the Flood Control District of Maricopa County shall be entitled and is hereby given the right to retain the said Bid Bond as liquidated damages.

The Undersigned acknowledges receipt of the following addenda, attached these to the bid package, and has included their provisions in the bid:

Addendum No. <u>ONE</u>	Dated <u>1-29-98</u>
Addendum No. _____	Dated _____

The Undersigned has enclosed the required bid security to this Bid.

BIDDING SCHEDULE

PROJECT: OLD CROSS CUT CANAL-PHASE 4, OSBORN TO INDIAN SCHOOL ROAD

CONTRACT: FCD 97-33

Item No.	Item Description	Unit	Approx. Quantity	Unit Cost Numbers	Extended Amount
105-1	PARTNERING	L.S.	1	\$5,000.00	\$5,000.00
105-2	GAS LINES	L.S.	1	21,000 ⁻	21,000 ⁻
105-3	DUCTBANK AND CABLES	L.S.	1	100 ⁻	100 ⁻
107-1	NPDES / SWPPP PERMITS	L.S.	1	5000 ⁻	5000 ⁻
107-2	PREPARATION OF HEALTH AND SAFETY PLAN	L.S.	1	1000 ⁻	1000 ⁻
107-3	PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE	L.S.	1	\$35,000.00	\$35,000.00
107-4	PROJECT SIGNS ALLOWANCE	L.S.	1	\$2,000.00	\$2,000.00
107-5	GROUND WATER DEWATERING	L.S.	1	20,000 ⁻	20,000 ⁻
202-1	MOBILIZATION	L.S.	1	67,800 ⁻	67,800 ⁻
205-1	ROADWAY EXCAVATION	C.Y.	813	1 ⁵⁰	1219 ⁵⁰
206-1	GEOCOMPOSITE DRAIN (ADDENDUM #1)	S.Y.	4,687	5 ⁻	23435 ⁻
211-1	FILL CONSTRUCTION	C.Y.	52,897	2 ⁵⁰	132242 ⁵⁰
215-1	EARTHWORK FOR OPEN CHANNELS (EXCAVATION)	C.Y.	1,541	6 ⁻	9246 ⁻
301-1	SUBGRADE PREPARATION UNDER PAVEMENT ADD.#1	S.Y.	-7,401	0 ⁸⁰	8388 ⁻
310-1	AGGREGATE BASE COURSE (ADD-ALTERNATE) ADD.#1	C.Y.	343	28 ⁻	9604 ⁻
321-1	ASPHALT CONCRETE PAVEMENT C-3/4 (ADD-ALTERNATE) ADD.#1	TON	336	30 ⁻	10080 ⁻
321-2	ASPHALT CONCRETE PAVEMENT D-1/2	TON	837	37 ⁻	30969 ⁻
321-3	ASPHALT CONCRETE PAVEMENT A-1 1/2	TON	2,092	30 ⁻	62760 ⁻
329-1	TACK COAT	TON	3	600 ⁻	1800 ⁻
339-1	CONCRETE MEDIAN ISLANDS	L.S.	1	20,000 ⁻	20,000 ⁻
340-1	CONCRETE CURB AND GUTTER, MAG DET 220, TYPE A	L.F.	2,760	8 ⁻	22080 ⁻
340-2	CONCRETE CURB AND GUTTER, MAG DET 220, MODIFIED TYPE A	L.F.	2,709	7 ⁻	18963 ⁻
340-3	CONCRETE SINGLE CURB, MAG DET. 222, MODIFIED TYPE B	L.F.	140	10 ⁻	1400 ⁻
340-4	6" x 6" CONCRETE EDGING (ADD-ALTERNATE) (ADD.#1)	L.F.	4,688	5 ⁻	23440 ⁻

BIDDING SCHEDULE

PROJECT: OLD CROSS CUT CANAL-PHASE 4, OSBORN TO INDIAN SCHOOL ROAD

CONTRACT: FCD 97-33

Item No.	Item Description	Unit	Approx. Quantity	Unit Cost Numbers	Extended Amount
340-5	MOUNTABLE CURB AND GUTTER	L.F.	227	8 ⁻	1816 ⁻
340-6	CONCRETE SIDEWALK, COP DET. P-1230	S.F.	695	2 ⁻	1390 ⁻
340-7	CONCRETE DRIVEWAY, 9-INCH SECTION	S.F.	1,975	4 ⁻	7900 ⁻
340-8	CONCRETE MEDIAN NOSE	S.F.	167	5 ⁻	835 ⁻
340-9	CONCRETE SIDEWALK RAMP, COP DET. P-1234, TYPE B	EA.	2	500 ⁻	1000 ⁻
340-10	CONCRETE SIDEWALK RAMP, COP DET. P-1234, MODIFIED TYPE B	EA.	1	700 ⁻	700 ⁻
340-11	CONCRETE SIDEWALK RAMP, COP DET. P-1235, MODIFIED TYPE C	EA.	1	600 ⁻	600 ⁻
342-1	CONCRETE PAVING STONE	S.F.	9,399	6 ⁻	56394 ⁻
345-1	ADJUST BOX FRAME AND COVER	EA.	1	200 ⁻	200 ⁻
345-2	ADJUST MANHOLE FRAME AND COVER	EA.	6	250 ⁻	1500 ⁻
350-1	REMOVE FENCE, HANDRAIL, GUARD-RAIL, POSTS AND BARRICADES	L.S.	1	2000 ⁻	2000 ⁻
350-2	REMOVE CURB AND GUTTER	L.S.	1	3000 ⁻	3000 ⁻
350-3	REMOVE PIPE	L.S.	1	1000 ⁻	1000 ⁻
350-4	REMOVE SPILLWAYS AND CHANNEL LINING	L.S.	1	3000 ⁻	3000 ⁻
350-5	REMOVE ASPHALT PAVEMENT	L.S.	1	3000 ⁻	3000 ⁻
350-6	REMOVE BOX CULVERTS AT INTERSECTION	L.S.	1	50000 ⁻	50000 ⁻
350-7	REMOVE DUMPED RIPRAP	L.S.	1	1 ⁻	1 ⁻
350-8	REMOVE SIDEWALK AND DRIVEWAYS	L.S.	1	200 ⁻	200 ⁻
350-9	MISCELLANEOUS REMOVALS	L.S.	1	50324 ⁻	50324 ⁻
350-10	REMOVE TREES	EA.	5	300 ⁻	1500 ⁻
401-1	TRAFFIC CONTROL	L.S.	1	10,000 ⁻	10000 ⁻
401-2	OFF-DUTY UNIFORMED OFFICER	M.H.	500	25 ⁻	12500 ⁻
401-3	TRAFFIC SIGNALIZATION	L.S.	1	50,000 ⁻	50000 ⁻
401-4	INDIAN SCHOOL ROAD DETOUR	L.S.	1	150,000 ⁻	150,000 ⁻
405-1	TYPE "A" SURVEY MARKER, MAG DET. 120-1	EA.	1	300 ⁻	300 ⁻

BIDDING SCHEDULE

PROJECT: OLD CROSS CUT CANAL-PHASE 4, OSBORN TO INDIAN SCHOOL ROAD

CONTRACT: FCD 97-33

Item No.	Item Description	Unit	Approx. Quantity	Unit Cost Numbers	Extended Amount
415-1	BARRICADE	L.F.	117	40 ⁻	4680 ⁻
415-2	GUARDRAIL	L.F.	141	25 ⁻	3525 ⁻
420-1	CHAIN LINK FENCE	L.F.	136	10 ⁻	1360 ⁻
432-1	GRAVEL MULCH	S.Y.	150	3 ⁻	450 ⁻
440-1	4-INCH PVC SLEEVES	L.F.	413	5 ⁻	2065 ⁻
440-2	6-INCH PVC SLEEVES	L.F.	144	8 ⁻	1152 ⁻
450-1	MAIN DUCTBANK INSTALLATION	L.F.	1,988	21 ⁻	41748 ⁻
450-2	SERVICE LATERAL DUCTBANKS INSTALLATION	L.F.	1,325	12 ⁻	15900 ⁻
505-1	DOUBLE 12' x 10' CONCRETE BOX CULVERT	L.F.	850	855 ⁻	726750 ⁻
505-2	DOUBLE 10' x 10' CONCRETE BOX CULVERT	L.F.	1,655	745 ⁻	1,232,975 ⁻
505-3	TRANSITION FROM DOUBLE 12' x 10' TO DOUBLE 10' x 10' CONCRETE BOX CULVERT	L.F.	10	1100 ⁻	11,000 ⁻
505-4	CONCRETE APRON	S.F.	1,873	4 ⁻	7492 ⁻
505-5	CONCRETE SPILLWAYS	S.Y.	97	55 ⁻	5335 ⁻
505-6	SINGLE GRATE DROP INLETS	EA.	4	2000 ⁻	8000 ⁻
505-7	DOUBLE GRATE DROP INLETS	EA.	1	2500 ⁻	2500 ⁻
505-8	DET. P-1570 TYPE "N" SINGLE CATCH BASINS	EA.	2	1800 ⁻	3600 ⁻
505-9	DET. P-1570 TYPE "N" 6-GRATE CATCH BASIN	EA.	1	7000 ⁻	7000 ⁻
505-10	CONCRETE SCUPPERS, MAG DET. 206.1 AND 206.2	EA.	1	500 ⁻	500 ⁻
505-11	CONCRETE SCUPPER AT INDIAN SCHOOL ROAD	L.S.	1	500 ⁻	500 ⁻
505-12	BLOCKWALL FOOTER	C.Y.	9	600 ⁻	5400 ⁻
510-1	CONCRETE BLOCK MASONRY	S.F.	475	10 ⁻	4750 ⁻
515-1	REMOVABLE BOLLARDS	EA.	3	400 ⁻	1200 ⁻
515-2	ACCESS BARRIER TRASH RACKS	L.S.	1	4000 ⁻	4000 ⁻
520-1	HANDRAIL	L.F.	22	225 ⁻	4950 ⁻
525-1	CHANNEL BOTTOM AND SLOPE PROTECTION	S.Y.	248	22 ⁻	5456 ⁻
609-1	WELL CLOSURE	EA.	1	1500 ⁻	1500 ⁻
610-1	WATER LINE (12-INCH)	L.F.	125	180 ⁻	22,500 ⁻
610-2	WATER LINE (16-INCH)	L.F.	155	165 ⁻	25,575 ⁻

BIDDING SCHEDULE

PROJECT: OLD CROSS CUT CANAL-PHASE 4, OSBORN TO INDIAN SCHOOL ROAD

CONTRACT: FCD 97-33

Item No.	Item Description	Unit	Approx. Quantity	Unit Cost Numbers	Extended Amount
610-3	FIRE HYDRANT RELOCATION	EA.	1	1100 ⁻	1100 ⁻
618-1	12" RGRCP	L.F.	57	71 ⁻	4047 ⁻
618-2	15" RGRCP	L.F.	9	123 ⁻	1107 ⁻
618-3	18" RGRCP	L.F.	74	74 ⁻	5476 ⁻
618-4	24" RGRCP	L.F.	22	110 ⁻	2420 ⁻
618-5	33" RGRCP	L.F.	18	140 ⁻	2520 ⁻
618-6	48" RGRCP	L.F.	51	180 ⁻	9180 ⁻
618-7	60" RGRCP	L.F.	32	170 ⁻	5440 ⁻
618-8	TYPE "C" PIPE SUPPORT MAG DET. 403-1,2	EA.	1	800 ⁻	800 ⁻
618-9	PIPE PLUG, MAG DET. 427	EA.	1	660 ⁻	660 ⁻
625-1	ACCESS MANHOLES	EA.	5	1500 ⁻	7500 ⁻
625-2	STORM DRAIN AND IRRIGATION MANHOLES	EA.	2	2100 ⁻	4200 ⁻
630-1	12-INCH TAPPING SLEEVE AND VALVE	EA.	1	3100 ⁻	3100 ⁻
630-2	12-INCH VALVE	EA.	1	900 ⁻	900 ⁻
TOTAL BID AMOUNT WRITTEN IN NUMBERS:				3,142,000	
TOTAL BID AMOUNT WRITTEN IN WORDS: <i>Three Million One Hundred & Forty Two thousand Dollars</i>					

IF BY AN INDIVIDUAL: n/a

By: _____
(Printed Name - Title) (Address)

(Signature) (Date) (Telephone Number)

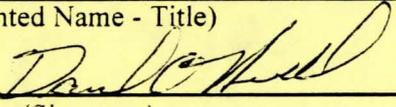
IF BY A FIRM, PARTNERSHIP OR L.L.C. (LIMITED LIABILITY COMPANY) n/a

(Firm Name) (Firm Address)
By: _____
(Signature - Title) (Date) (Telephone Number)

** Name and Address of Each Member, or each Manager of L.L.C. per Operating Agreement

** The Name and Post Office Address of each Member of the Firm or Partnership must be shown, or of each Manager of an L.L.C., also address of the registered office of the L.L.C.

IF BY A CORPORATION:

KIEWIT WESTERN CO.
(Corporate Name) 3888 East Broadway Road
Phoenix, Arizona 85040
(Corporation Address)
Daniel C. Howell, Vice President
(Printed Name - Title) 602) 437-7878
(Telephone Number)
By:  2-5-98
(Signature) (Date)

* Incorporated under the Laws of the State of DELAWARE. Names and Addresses of Officers:

Bruce E. Grewcock
(President) 3555 FARNAM ST.
Rodney K. Rosenthal (Address) OMAHA, NE 68131
(Secretary) SAME AS ABOVE
Gregory D. Brokke (Address) SAME AS ABOVE
(Treasurer) (Address)

* The Name of the State under which the Laws of the Corporation was Chartered and Name, Title, and Business Address of the President, Secretary, and Treasurer must be shown.

SUBCONTRACTOR LISTING

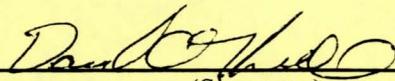
As required in Section 102.6 of the Supplementary General Conditions, the following is a listing of Subcontractors and material suppliers (including any M/WBE participation) that are to be used in the event the undersigned should enter into contract with the Owner. Although this list will not be considered as final commitment on the part of the successful proposer, any Subcontractor changes from those listed must have Owner's written approval prior to commencement of Subcontractor work on site.

Guardrail/Fence: 5G 3801 E. Superior Ave Phoenix

Water pipe supplier US Filter 280 W Cherry Lynn Rd Phoenix

Electric/Signal Arizona Traffic 11021 N 21 Ave Phoenix

Concrete supplier United Metro 701 N 44th St Phoenix
‡ Asphalt


(Signature)

Daniel C. Howell, Vice President

Rebar: Paradise Rebar PO Box 86458 Phoenix

Curb & Gutter, Sidewalk Concrete placement 6527 W Northview Glendale

Concrete Paven. Renowed Pavers 9405 E. Doubletree. Branch Scottsdale.

public relations Wordworks 16249 N 58th Place Scottsdale tel 443-3471

Duct bank Somerville/Shanno. 3806 S 16th St Phoenix

RCP supplier Gifford Hill 3450 N 27th Ave Phoenix

KIEWIT WESTERN CO.

A Kiewit Company
AN EQUAL OPPORTUNITY EMPLOYER

3888 East Broadway Road • Phoenix, Arizona 85040 • (602) 437-7878 • FAX (602) 437-7719

February 5, 1998

Maricopa Flood Control District

In accordance with the contract specifications, our Public Relations
Subcontractor for this project will be:

Word Works Communications



SURETY BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, KIEWIT WESTERN CO., as Principal, (hereinafter called the Principal), and the Travelers Casualty and Surety Company of America, a corporation duly organized under the laws of the State of CT, as Surety, (hereinafter called the Surety), are held and firmly bound unto the Flood Control District of Maricopa County as Obligee, in the sum of **ten percent (10%)** of the total amount of the bid of Principal, submitted by him to the Flood Control District of Maricopa County, for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents, and in conformance with the Arizona Revised Statutes.

WHEREAS, the said Principal is herewith submitting its proposal for Contract FCD 97-33 for Old Cross Cut Canal, Phase 4.

NOW, THEREFORE, if the Flood Control District of Maricopa County shall accept the proposal of the Principal and the Principal shall enter into a contract with the Flood Control District of Maricopa County in accordance with the terms of the proposal and give the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of the contract and for the prompt payment of labor and material furnished in the prosecution of the contract, or in the event of the failure of the Principal to enter into the contract and give such Bond and Certificate of Insurance, if the Principal pays to the Flood Control District of Maricopa County the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Flood Control District of Maricopa County may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect, provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

Signed and sealed this 5 day of FEBRUARY, A.D., 1998.

Marsh & McLennan
Agency of Record, State of Arizona
4041 North Central Avenue, Suite 1700
Agency Address
Phoenix, AZ 85012

KIEWIT WESTERN CO.
Principal
By: [Signature]
(Printed Name) (Signature)
Daniel C. Howell, Vice President
Title: _____

Travelers Casualty and Surety Company of America
Surety
By: [Signature]
Title: Jennifer L. Bookout, Attorney-in-Fact

Bond Number: N/A

ATTACH SURETY POWER OF ATTORNEY

POWER OF ATTORNEY AND CERTIFICATE OF AUTHORITY OF ATTORNEY(S)-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, THAT TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a corporation duly organized under the laws of the State of Connecticut, and having its principal office in the City of Hartford, County of Hartford, State of Connecticut, hath made, constituted and appointed, and does by these presents make, constitute and appoint Robert D. Lembke, P. A. Foss, Philip G. Dehn, Terry K. Bartel, Jennifer L. Bookout or Janet R. Nielsen **

of, Omaha, NE, its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred to sign, execute and acknowledge, at any place within the United States, or, if the following line be filled in, within the area there designated
, the following instrument(s):

by his/her sole signature and act, any and all bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking and any and all consents incident thereto

and to bind TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, thereby as fully and to the same extent as if the same were signed by the duly authorized officers of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, and all the acts of said Attorney(s)-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This appointment is made under and by authority of the following Standing Resolutions of said Company, which Resolutions are now in full force and effect:

VOTED: That each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, may from time to time appoint Resident Vice Presidents, Resident Assistant Secretaries, Attorneys-in-Fact, and Agents to act for and on behalf of the Company and may give any such appointee such authority as his certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors may at any time remove any such appointee and revoke the power and authority given him or her.

VOTED: That any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the Chairman, the Vice Chairman, the President, an Executive Vice President, a Group Executive, a Senior Vice President, a Vice President, an Assistant Vice President or by a Resident Vice President, pursuant to the power prescribed in the certificate of authority of such Resident Vice President, and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary or by a Resident Assistant Secretary, pursuant to the power prescribed in the certificate of authority of such Resident Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact pursuant to the power prescribed in his or their certificate or certificates of authority.

This Power of Attorney and Certificate of Authority is signed and sealed by facsimile under and by authority of the following Standing Resolution voted by the Board of Directors of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, which Resolution is now in full force and effect:

VOTED: That the signature of each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

(over)

IN WITNESS WHEREOF, TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA has caused this instrument to be signed by its Senior Vice President, and its corporate seal to be hereto affixed this 1st day of July, 1997.

STATE OF CONNECTICUT

} SS. Hartford

COUNTY OF HARTFORD



TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA

By *George W. Thompson*
George W. Thompson
Senior Vice President

On this 1st day of July, 1997, before me personally came GEORGE W. THOMPSON to me known, who, being by me duly sworn, did depose and say: that he/she is Senior Vice President of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, the corporation described in and which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; and that he/she executed the said instrument on behalf of the corporation by authority of his/her office under the Standing Resolutions thereof.



Marie C Tetreault
My commission expires June 30, 2001 Notary Public
Marie C. Tetreault

CERTIFICATE

I, the undersigned, Assistant Secretary of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a stock corporation of the State of Connecticut, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Standing Resolutions of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, in the City of Hartford, State of Connecticut. Dated this 5th day of February, 1998.



By: *Rose Gonsoulin*
Rose Gonsoulin
Assistant Secretary

CERTIFICATION OF LICENSE

Pursuant to A.R.S. Section 32-1169, I hereby state that I hold a current contractor's license, duly issued by the office of the Registrar of Contractors for the State of Arizona, said license has not been revoked, that the license number is: *_____ that my privilege license number (as required by A.R.S. Section 42-1305) is: 07-272110T *074539-A-GEN. ENG. AND 082165-B-GEN. COMMERCIAL _____; and that, if any exemption to the above licensing requirements is claimed;

(1) The basis for the claimed exemption is: _____ and;

(2) The name(s) and license number(s) of any general, mechanical, electrical, or plumbing contractor(s) to be employed on the work are:

IT IS UNDERSTOOD THAT THE FILING OF AN APPLICATION CONTAINING FALSE OR INCORRECT INFORMATION CONCERNING AN APPLICANT'S CONTRACTOR'S LICENSE OR PRIVILEGE LICENSE WITH THE INTENT TO VOID SUCH LICENSING REQUIREMENTS IS UNSWORN FALSIFICATION PUNISHABLE ACCORDING TO A.R.S. SECTION 13-2704.



Signature of Licensee Daniel C. Howell
Vice President

Date: 2-5-98

Company: KIEWIT WESTERN CO.

**MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISE PROGRAM
CONSTRUCTION CONTRACTING REQUIREMENTS**

A. The following conditions will apply in the calculations of the percentage attainment:

1. All M/WBE firms used in attainment of the goal must be certified with the Maricopa County Minority Business Office (MBO). The MBO is located at 2901 West Durango Street, Phoenix, Arizona 85009, telephone 506-4068. In addition, only those firms certified prior to the bid opening will be considered in the attainment of the goal.
2. Prime contractor subcontracts to MBE or WBE:
The M/WBE amount to be applied to the goal will be based on that portion (dollar value) of the contract that the M/WBE performs. For example, if a prime contractor subcontracts work amounting to \$100,000 of a contract for which the total project cost is \$1,000,000 the M/WBE participation will be credited as 10 percent.
3. Prime Minority Contractor:
An M/WBE prime contractor will be credited with the M/WBE participation for that portion of the contract which they themselves perform plus that portion subcontracted to other M/WBE firms. For example, if an M/WBE prime contractor proposes to perform 50 percent of a project quoted as \$1,000,000 and subcontracts 25 percent to an MBE firm and 25 percent to a non-M/WBE firm, M/WBE participation will be credited as 75 percent, or \$750,000.
4. Minority-Non Minority Joint Venture:
A joint venture consisting of M/WBE participation and non-M/WBE business enterprises, functioning as a prime contractor, will be credited with minority participation on the basis of the percentage of profit accruing to the M/WBE firm. For example, if a M/WBE and non-M/WBE joint venture proposes to perform 50 percent of a \$1,000,000 project and 50 percent of the joint venture profits (\$500,000) are to accrue to the M/WBE partner in the joint venture, M/WBE participation will be credited at 25 percent or \$250,000.
5. Lower Tier Non-M/WBE Participation:
M/WBE subcontractors proposing to further subcontract to non-M/WBE contractors shall not have that portion of subcontracting activity considered when determining the percentage of M/WBE participation.
6. M/WBE Suppliers:
Any M/WBE supplier that performs a commercially useful function, manufactures or substantially alters the material or product it supplies will have that portion of activity considered when determining the percentage of M/WBE participation.
7. M/WBE Trucking:
Credit for trucking by MBEs or WBEs will be the amount to be paid when the MBE or WBE trucker will perform the trucking with his/her trucks, tractors, and employees or when a MBE or WBE trucking broker has signed agreements with MBE and WBE truckers.

B. Required forms:

Two Affidavits are included as part of this section. The first form, the "M/WBE Assurances Affidavit", must be completed and submitted with the bid - **Failure to do so may be cause for rejection of the bid.**

A SAMPLE of the "Actual M/WBE Participation Affidavit", that must be completed and returned by the first and second bidders to the Minority Business Office by 4:00 p.m. on the seventh calendar day after bid opening, if M/WBE goals have been established, is provided for information purposes. A copy of the sample or the sample form itself may also be used. The affidavit will list the M/WBE participation by M/WBE firm name and the relative dollar value of the M/WBE

contract. The information in this affidavit is binding on the contractor, to the extent that any amounts may be increased and not decreased, and that if any listed M/WBE's are unable to enter into a subcontract with contractor, the contractor **must** provide a written report to the Procurement Officer, through the Owner's representative in accordance with instructions provided elsewhere in this document.

C. Good Faith Efforts:

Bids which fail to meet MBE or WBE minimum goals at levels which equal or exceed established goals may be considered nonresponsive unless good faith efforts can be determined. Only MBE and WBE firms certified by Maricopa County prior to the bid submittal date, and which will perform a commercially useful function will be counted toward meeting the participation goals. Any portion of the work that a proposed MBE or WBE firm will subcontract to other than a certified firm, regardless of tier, will not be counted toward the applicable goals.

The apparent first and second low bidders who do not fulfill the established MBE and WBE goals must demonstrate, through detailed and comprehensive documentation, that "good faith" efforts have been made to solicit, assist and utilize MBE and WBE firms to meet participation goals.

The County minority Business Office (MBO) will assist prime contractors in identifying possible qualified and interested MBE and WBE subcontractors to meet designated MBE and WBE goals. **A M/WBE listing will be furnished with the bidding documents**, which contractors must utilize in identifying M/WBE firms. It will be the responsibility of the prime contractors to obtain the MBE and WBE firms necessary to meet the MBE and WBE goals. **FAILURE TO CONTACT THE MBO FOR ASSISTANCE IN COMPLYING WITH THESE GOALS MAY RESULT IN NOT HAVING IMPLEMENTED "GOOD FAITH" EFFORTS.** Contact may be in writing, by telephone, or in person. If by phone or in person, name of MBO person spoken to should be obtained and written within the "CONTRACTOR CERTIFICATE OF GOOD FAITH" SUBMITTAL FORM (supplied if a contract has M/WBE goals).

(The Minority Business Office is located at 2901 West Durango Street, Phoenix, Arizona. Telephone number is 506-8656.

Failure to implement "Good Faith" efforts in accordance with the Maricopa County Minority Business Enterprise Program to the satisfaction of Maricopa County may result in the rejection of the bid.

If information submitted by a prime contractor indicates that established MBE and WBE goals have not been met, the contractor must be required to provide sufficient documentation to demonstrate that he/she has complied with MBE and WBE requirements or good faith efforts. Good faith efforts will be determined by both quality and intensity of these efforts. Documentation provided to the MBO must include:

1. The date bidder requested assistance in writing, in person, or by telephone from the MBO. The bidder should request assistance from the MBO office in order for a determination to be made. **As Maricopa County M/WBE listings are updated frequently, bidders shall contact the MBO to ensure that they have the most recent edition.**
2. Names, addresses and telephone numbers; and dates of notification of Maricopa County certified MBEs and WBEs solicited by direct mail for this project; and dates and methods used for follow up of initial solicitations to determine with certainty whether MBEs or WBEs were interested in subcontracting.
3. Items of work for which bidder requested subbids, proposals or materials to be supplied by MBEs and WBEs; information furnished to interested MBEs and WBEs such as specifications and requirements of the work; plans; and any breakdown of items of work into economically feasible units to facilitate MBE and WBE participation.
4. Names of MBEs and WBEs who submitted bids for any of the work indicated above and were not accepted by the prime contractor. An explanation of why MBEs or WBEs contacted will not be

awarded subcontracts. If price was the reason for rejection of the bid, the price bid of rejected MBEs or WBEs and price bid of the selected subcontractor shall be submitted. Since utilization of available MBEs and WBEs is the program objective, price differences will not automatically be considered as cause for a prime contractor's rejection of MBE and WBE bids.

5. Documentation of written notices or telephone calls to a reasonable number of M/WBEs soliciting their participation in sufficient time to allow M/WBEs to participate effectively. All M/WBEs listed on the Maricopa County Certification list which provide applicable goods and services for subject procurement/project should be contacted.

The following efforts can also be utilized in demonstrating "Good Faith" in soliciting M/WBE participation.

1. A description of the efforts made to assist MBEs and WBEs whose bids were rejected to be more competitive in their subcontracting bids. These efforts could include assistance in meeting bonding or insurance requirements.

2. Names and dates of advertisement of each newspaper, trade paper, and minority focus paper in which a request for MBE and WBE participation for this project was placed by the bidder.

Contractors are encouraged to seek M/WBEs in the same geographical area in which the work is to be performed or goods provided. If the bidder cannot meet the established goals using M/WBEs from the geographical area, the bidder should expand its search to a reasonable wider geographical area.

The MBO will make the final decision as to whether good faith efforts were met, based on the information submitted.

D. Appeal Process for Bid Award:

If the Owner is considering award of a contract to a bidder other than the low bidder because of failure to meet MBE and WBE participation goals or good faith efforts, the low bidder will be notified and given an opportunity to protest the decision. This protest will be made in accordance with the Maricopa County Procurement Code, Article 9, MCI-905, which is incorporated by reference.

E. Contract Compliance:

Failure of any bidder, contractor or subcontractor to comply with any of the requirements of the Maricopa County minority and Women-Owned Business Program shall be a material breach of contract. During the term of an awarded contract, the prime contractor shall:

1. Fulfill the MBE and WBE participation commitments submitted with their bid;
2. Continue to make every effort to utilize MBEs and WBEs;
3. Require that their subcontractors make every effort to utilize MBEs and WBEs;
4. Maintain records necessary for monitoring their compliance with provisions contained in the M/WBE Program.

The primary responsibility for assuring contractor's compliance with these M/WBE contract requirements after award rests with the Owner's designated representative. The Owner's designated representative should ascertain that no one other than the approved MBE or WBE contractors or subcontractors are performing the work, and that MBE and WBE subcontractor substitutes have been approved in advance. The prime contractor shall not perform any MBE or WBE contract work items without prior approval by the Owner's Procurement Officer, through the Owner's designated representative.

The Owner's Procurement Office shall advise the Minority Business Office immediately of any circumstances where a contractor appears to be in violation of the MBE and WBE contract

requirements. An investigation will be held by the MBO and a recommendation for corrective action shall be forwarded to the Owner's Procurement Officer. Intentional noncompliance with the MBE and WBE requirements may result in withholding funds on the items already completed, in termination of the contract, and/or formal debarment from future contracts. The Maricopa County Minority Business Office reserves the right to inspect all records of the contractor, MBEs and WBEs concerning this project.

The MBO will conduct MBE and WBE compliance reviews on a regular basis.

F. Substitution of Subcontractors:

The prime contractor shall request approval to replace an approved MBE or WBE subcontractor that is unable or unwilling to perform successfully on a contract with another MBE or WBE. This failure does not remove the contractor's responsibility for meeting the MBE and WBE participation goals on

the contract. A written request for substitution must be made to the Owner's Procurement Officer, through the designated Owner's representative, of the Procurement Agency. The substitute MBE or WBE, obtained to perform an equal or greater dollar value of work, must be approved by the Owner's Procurement Officer, through the designated Owner's representative, prior to beginning of any work by the substitute MBE or WBE. The request for substitution must include, but is not limited to the following:

1. Reason for substitution.
2. Name, address, and telephone number of the approved MBE or WBE.
3. Name, address and telephone number of the MBE or WBE substitute.
4. Item, numbers, description of work and the proposed MBE and/or WBE dollar amount.
5. Good faith effort documentation if the substitute subcontractor is not an MBE or WBE.

G. Requests for Pay:

Each Request for Pay must be accompanied by a Maricopa County Minority/Women-Owned Business Enterprise Program "MBE/WBE Participation Report " as provided by the Flood Control District of Maricopa County.

The final pay request shall include a listing of total contract MBE/WBE participation. Line numbers and a description of actual work performed shall also be included. If, at the time of contract completion, the MBE and WBE commitments are not actually attained, the report is to provide an explanation of failure to comply. These reports shall be submitted within thirty (30) days of contract completion, **prior to release of any remaining contract retention.**

CONTRACTOR CERTIFICATE OF GOOD FAITH*

The intent of this certification is to document the good faith efforts implemented by the apparent low bidder in soliciting and utilizing M/WBE firms to meet the established M/WBE goals for County contracts. This certificate will assist Maricopa County in determining whether the apparent low bidder has implemented "good faith" efforts in accordance with the Maricopa County Minority Business Program. The burden of proof rests with the apparent low bidder.

(NOTE: Prior to filling out this certificate it is important that contractors review the "good faith" efforts requirements in the M/WBE section of the project specification booklet).

Failure to implement "good faith" efforts to the satisfaction of Maricopa County may result in rejection of the proposal.

I, Daniel C. Howell, do hereby acknowledge that I am the Vice President of KIEWIT WESTERN CO. who has been identified as the selected contractor on Flood Control District Project/Contract FCD ____.

Provide a brief summary of why the established M/WBE goal for this project has not been met. (Attach additional sheets if necessary).

I hereby certify that I have made comprehensive "good faith" efforts to solicit and utilize County certified M/WBEs to meet the established M/WBE goal of this project as demonstrated by my responses to the following questions:

A. IDENTIFYING SUBCONTRACTOR WORK ITEMS

Contractors are encouraged to select portions of work to be subcontracted in a manner which will increase the likelihood of meeting the established M/WBE goal for the project. In selecting work to be performed, contractors will consider, where appropriate, breaking down the project into economically feasible units to facilitate M/WBE participation. Contractors are reminded that only M/WBE certified by the County can be used as participants towards meeting the project goals. A County M/WBE Certification listing will be provided to all contractors interested in submitting bids for projects. This listing is the only authorized source from which to select M/WBEs for project participation. Current copies of this listing may be obtained by calling the Minority Business Office at (602) 506-4068.

1. Which portions of the contract proposal, in terms of the nature of the work were selected to be subcontracted to M/WBE firms?

B. NOTIFYING M/WBE FIRMS OR CONTRACTING OPPORTUNITIES

1. Solicitations by mail/fax must be made to all M/WBE firms identified on the M/WBE Certification Listing that perform the type of work which is proposed for subcontracting. Following this initial solicitation, at least one follow-up telephone call must be made to any of the M/WBE firms who have not responded to the mailing.

2. In the spaces provided below, indicate which firms received written notification of work items to be subcontracted. In the appropriate space, also indicate when the M/WBE firms received subsequent telephone solicitations. Please attach additional sheets so that all firms contacted are listed and attach photo copies of all written/fax solicitations to M/WBEs to this documentation.

M/WBE Firm Contacted No.	Date	Name	Tel.
--------------------------	------	------	------

3. Were the services of the County Minority Business Office used to assist the contractor in the

recruitment of M/WBEs or to assist in solving other problems? Yes_____ No_____

Contact was made by_____ Telephone_____

Written correspondence_____ Date contacted_____

Staff person contacted_____

C. PROVIDING M/WBES WITH ASSISTANCE

1. Explain any efforts undertaken to provide M/WBEs with information regarding project plans, specifications and requirements of the project:

2. Describe any efforts initiated to provide special assistance to M/WBE firms interested in participating in this project:

3. Describe any efforts undertaken to assist M/WBE firms in obtaining bonding, lines of credit, or insurance required by the County for this project:

4. Was solicitation for M/WBEs advertised in local papers, ethnic periodicals, or trade journals? If YES, please list the name of the periodical and dates advertised.

D. SOLICITING QUOTES FROM M/WBE FIRMS

Contractors must solicit quotes in good faith with interested M/WBE firms. Quotes and bids from interested M/WBEs must not be rejected by bidders without sound justification based upon a thorough investigation of the capabilities of the M/WBE firms.

1. Indicate in the space provided below, which M/WBE firms submitted quotes on the project proposal. Also provide a brief explanation of why any of these M/WBE quotes were rejected. If price was a determining factor, provide documentation showing the non-minority quotes. Please attach additional sheets if necessary.

Name of M/WBE Firm

Explanation for rejecting quote

* To be included in contract documents or those procurements which have M/WBE contract goals.

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
MINORITY/WOMEN-OWNED BUSINESS ENTERPRISE PROGRAM
MBE/WBE ASSURANCES AFFIDAVIT**

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS AFFIDAVIT WITH THE BID PROPOSAL MAY BE CAUSE FOR REJECTION OF THE BID.

The undersigned, fully cognizant of the Flood Control District of Maricopa County MBE/WBE Program requirements and of the goal established, hereby certifies that in the preparation of this bid,

KIEWIT WESTERN CO. (the entity submitting the bid)

(CHECK ONE)

- Will meet the **established** goal for participation by Minority/Women-Owned Business Enterprises.
- Will provide the necessary documentation to Minority Business Office to establish that a good faith effort was made.

The first and second low bidders will specify their MBE/WBE participation on the Actual Participation affidavit or provide documentation of their good faith efforts not later than 4:00 p.m., the seventh calendar day following the bid opening. If participation is "None", the documentation shall provide bidder's good faith efforts to obtain the participation. This documentation will be reviewed by the MBO to determine whether in fact a comprehensive "good faith" effort has been implemented. The required affidavit shall be obtained by the apparent first and second low bidders from the Minority Business Office, 2901 West Durango Street, Phoenix, Arizona 85009, Telephone 506-8656, following the bid opening and verbal notification from the Procurement Officer of the Procurement Agency; a SAMPLE affidavit form for reference purposes follows.

KIEWIT WESTERN CO.

Name of Firm

By: 

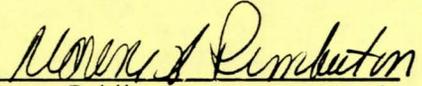
Signature

Daniel C. Howell, Vice President

Title

STATE OF ARIZONA)
County of MARICOPA)ss

Subscribed and sworn to before me this 5 day of FEB., 1998.


Notary Public Dorene A. Pemberton

My Commission Expires: October 11, 1998

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 MINORITY/WOMEN OWNED BUSINESS ENTERPRISE PROGRAM
ACTUAL MBE/WBE PARTICIPATION AFFIDAVIT

(NOTE: COMPLETED AFFIDAVIT MUST BE SUBMITTED WITHIN SEVEN CALENDAR DAYS FOLLOWING THE BID OPENING).

KIEWIT WESTERN CO. Project/Contract Number FCD 97-33 Total Amount of Contract \$3,142,000.00
 Name of Contractor
Daniel C. Howell Contract M/WBE Goal: 10 %
 Contact Person
3888 East Broadway Road
 Street No.
Phoenix, Arizona 85040
 City State Zip

Minority/Women Owned Firm	Principal	Address	Type of Work	Contract Percentage
PARADISE REBAR, INC.	JOEL RASCHKE	P.O. BOX 86458 PHOENIX, AZ 85080	REBAR	11.9%

TOTALS (Dollars/Percentage) \$374,984.00 / 11.9%

The undersigned has entered into a formal agreement with the MBE/WBE subconsultants/subcontractors /suppliers listed above. in the execution of this contract with Maricopa County.


 Signature
Daniel C. Howell, Vice President
 Title
February 10, 1998
 Date

STATE OF ARIZONA }
 County of MARICOPA }^{ss}

Subscribed and sworn to before me this 10 day of FEB. by 
 My commission Expires: October 11, 1998
 Notary Public Dorene A. Pemberton

KIEWIT WESTERN CO.

A Kiewit Company
AN EQUAL OPPORTUNITY EMPLOYER

3888 East Broadway Road • Phoenix, Arizona 85040 • (602) 437-7878 • FAX (602) 437-7719

February 10, 1998

Hand Delivered

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399

Attention: Ms. Heidi Birch
Contracts Manager

Reference: Contract FCD 97-33
Old Cross Cut Canal, Phase 4
Bid Date: February 5, 1998

Subject: MBE/WBE Participation Affidavit

Dear M s. Heidi Birch:

In accordance with the requirements on the referenced project, we hereby submit the attached MBE/WBE Participation Affidavit for review and consideration in the award of the project.

If you have any questions or comments, contact me or Ron Hallquist.

Sincerely,



Dennis J. Grenier
Job Sponsor

Encl.

DJG:dp

cc: DBE File
EEO File
Job File



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 MINORITY/WOMEN OWNED BUSINESS ENTERPRISE PROGRAM
ACTUAL MBE/WBE PARTICIPATION AFFIDAVIT
 (NOTE: COMPLETED AFFIDAVIT MUST BE SUBMITTED WITHIN SEVEN CALENDAR DAYS
 FOLLOWING THE BID OPENING).

KIEWIT WESTERN CO. Project/Contract Number FCD 97-33 Total Amount of Contract _____
 Name of Contractor
Daniel C. Howell Contract M/WBE Goal: 10 %
 Contact Person
3888 East Broadway Road
 Street No.
Phoenix, Arizona 85040
 City State Zip

<u>Minority/Women Owned Firm</u>	<u>Principal</u>	<u>Address</u>	<u>Type of Work</u>	<u>Contract Percentage</u>

TOTALS (Dollars/Percentage) _____

The undersigned has entered into a formal agreement with the MBE/WBE subconsultants/subcontractors /suppliers listed above, in the execution of this contract with Maricopa County.


 Signature
Daniel C. Howell, Vice President
 Title

 Date

STATE OF ARIZONA }
 County of MARICOPA }^{ss}

Subscribed and sworn to before me this _____ day of FEB. by _____
 My commission Expires: October 11, 1998 Notary Public Dorene A. Pemberton

**MARICOPA COUNTY
MINORITY/WOMEN-OWNED BUSINESS ENTERPRISES PROGRAM**

**D/M/WBE PARTICIPATION REPORT
(To be attached with Each Request for Pay)**

Date: _____

General Contractor/Prime Consultant: _____
Contact Person: _____
Address: _____
Telephone Number: _____
Fax Number: _____

Project Description: Old Cross Cut Canal, Phase 4
Contract Number: FCD 97-33
For Pay Period of (indicate dates): _____

D/M/WBE Subcontractor/Subconsultant Name: _____
Contact Person: _____
Address: _____
Telephone Number: _____

Type of Firm: _____
Type of Work performed for this project: _____

Total D/M/WBE Subcontract Amount: \$ _____

Amount Paid to this D/M/WBE
Subcontractor this invoice: \$ _____

Total paid to this Subcontractor to date: \$ _____

Total D/M/WBE Contract Goal this project = ____ %

Total D/M/WBE Participation
on this contract to date = ____ %

cc: Maricopa County Infrastructure
Contracts and D/W/MBE Office
2901 West Durango Street
Phoenix, Arizona 85009

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this 20th day of Feb, 1998 by and between the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, hereinafter called the OWNER, acting by and through its BOARD OF DIRECTORS, and Kiewit Western Company, hereinafter called the CONTRACTOR.

WITNESSETH: That the said CONTRACTOR, for and in the consideration of the sum of three million, one hundred forty-two thousand dollars (\$3,142,000) to be paid to him by the OWNER, in the manner and at the times hereinafter provided, and of the other covenants and agreements herein contained, hereby agrees for himself, heirs, executors, administrators, successors, and assigns as follows:

ARTICLE I - SCOPE OF WORK: THE CONTRACTOR shall construct, and complete in a workmanlike and substantial manner and to the satisfaction of the Chief Engineer and General Manager, a project for the Flood Control District of Maricopa County, designated as Contract FCD-97-33, Old Cross Cut Canal, Phase 4, and furnish at its own cost and expense all necessary machinery, equipment, tools, apparatus, materials, and labor to complete the work in the most substantial and workmanlike manner according to the Plans and Construction Specifications on file with the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona, and such modifications of the same and other directions that may be made by the Flood Control District of Maricopa County as provided herein.

ARTICLE II - CONTRACT DOCUMENTS: The Construction Specifications, i.e. Invitation to Bid, Plans, Standard Specifications and Details, Supplementary General Conditions, Special Provisions, Addenda, if any, Proposal, Affidavits, Performance Bond, Payment Bond, Certificates of Insurance, and Change Orders, if any, are by this reference made a part of this Contract and shall have the same effect as though all of the same were fully inserted herein.

ARTICLE III - TIME OF COMPLETION: The CONTRACTOR further covenants and agrees at its own proper cost and expense, to do all work as aforesaid for the construction of said improvements and to completely construct the same and install the material therein, as called for by this agreement free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified within three hundred thirty (330) calendar days following notice to proceed.

ARTICLE IV - PAYMENTS: For and in consideration of the faithful performance of the work herein embraced as set forth in the Contract Documents, which are a part hereof and in accordance with the directions of the OWNER, through its Engineer and to its satisfaction, the OWNER agrees to pay the said CONTRACTOR the amount earned, computed from actual quantities of work performed and accepted or materials furnished at the unit bid price on the Proposal made a part hereof, and to make such payment in accordance with the requirements of A.R.S. Section 34-221, as amended. The CONTRACTOR agrees to discharge its obligations and make payments to its subcontractors and suppliers in accordance with A.R.S. Section 34-221.

ARTICLE V - TERMINATION: The OWNER hereby gives notice that pursuant to A.R.S. Section 38-511(A) this contract may be canceled without penalty or further obligation within three years after execution if any person significantly involved in initiation, negotiation, securing, drafting or creating a contract on behalf of the OWNER is, at any time while the contract or any extension of the contract is in effect, an employee or agent of any other party to the contract in any capacity or a consultant to any other party of the contract with respect to the subject matter of the contract. Cancellation under this section shall be effective when written notice from the Chief Engineer and General Manager of the OWNER is received by all of the parties to the contract. In addition, the OWNER may recoup any fee for commission paid or due to any person significantly involved in initiation, negotiation, securing, drafting or creating the contract on behalf of the OWNER from any other party to the contract arising as a result of the contract.

ARTICLE VI - NEGOTIATION CLAUSE: Recovery of damages related to expenses incurred by the CONTRACTOR for a delay for which the OWNER is responsible, which is unreasonable under the circumstances and which was not within the contemplation of the parties to the contract, shall be negotiated between the CONTRACTOR and the OWNER. This provision shall be construed so as to give full effect to any provision in the contract which requires notice of delays, provides for arbitration or other procedure for settlement or provides for liquidated damages.

ARTICLE VII - COMPLIANCE WITH LAWS: The CONTRACTOR is required to comply with all Federal, State and local ordinances and regulation. The CONTRACTOR's signature on this contract certifies compliance with the provisions of the I-9 requirements of the Immigration Reform Control Act of 1986 for all personnel that the CONTRACTOR and any subcontractors employ to complete this project. It is understood that the OWNER shall conduct itself in accordance with the provisions of the Maricopa County Procurement Code.

ARTICLE VIII - MBE/WBE PROGRAM: The OWNER will endeavor to ensure in every way possible that minority and women-owned business enterprises shall have every opportunity to participate in providing professional services, purchased goods, and contractual services to the OWNER without being discriminated against on the grounds of race, religion, sex, age, disability, or national origin. The Maricopa County Minority Business Program implemented January 1, 1992, is incorporated by reference.

ARTICLE IX - ANTI-DISCRIMINATION PROVISION: The CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, or disability and further agrees not to engage in any unlawful employment practices. The CONTRACTOR further agrees to insert the foregoing provision in all subcontracts hereunder.

IN WITNESS WHEREOF: Five (5) identical counterparts of this Contract, each of which shall for all purposes be deemed an original thereof, have been duly executed by the parties hereinabove named, on the date and year first above written.

KIEWIT WESTERN CO.

Party of the First Part

By: Daniel C. Howell
(Printed Name) (Signature)

Title: Daniel C. Howell, Vice President

Date: February 13, 1998

47-0640264
Tax Identification Number

FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY
PARTY OF THE SECOND PART

By: Jan Brewer 2/20/98
Chairman, Board of Directors Date

ATTEST: Jan Brewer 2/20/98
Clerk of the Board 100897 Date

RECOMMENDED BY:

W. B. Ball 2/19/98
Chief Engineer and General Manager Date
Flood Control District of Maricopa County

LEGAL REVIEW

Approved as to form and within the powers and authority granted under the laws of the State of Arizona to the Flood Control District.

By: Julie M. Johnson 2/2/98
District, General Counsel Date

**STATUTORY PERFORMANCE BOND PURSUANT TO TITLE 34
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)**

KNOW ALL MEN BY THESE PRESENTS:

That, KIEWIT WESTERN CO. hereinafter called the Principal, as Principal, and Travelers Casualty and Surety Company of America a corporation organized and existing under the laws of the State of CT, with its principal office in the City of Hartford (hereinafter called the Surety), as Surety, are held and firmly bound unto the Flood Control District of Maricopa County, in the County of Maricopa, State of Arizona, in the amount of three million, one hundred forty-two thousand dollars (\$3,142,000), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Flood Control District of Maricopa County, dated the ___ day of _____, 1998, for **Contract FCD 97-33, Old Cross Cut Canal, Phase 4**, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice to the Surety, and during the life of any guaranty required under the contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, and Article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this 13 day of Feb., 1998.

J & H Marsh & McLennan
Agency of Record, State of Arizona

Agency Address and Phone Number:
4041 North Central Avenue
Suite 1700
Phoenix, AZ 85012

BOND NUMBER: 20SB101149441BCM

ATTACH SURETY POWER OF ATTORNEY

COUNTERSIGNED

By: Cindy Juharos
Contract FCD 97-33 Cindy Juharos, AZ Resident Agent

KIEWIT WESTERN CO.

Principal

By: Daniel C. Howell
(Printed Name) (Signature)

Title: Daniel C. Howell, Vice President

Travelers Casualty and Surety Company of America
Surety Seal

By: Jennifer L. Bookout
Title: Jennifer L. Bookout, Attorney-in-Fact

POWER OF ATTORNEY AND CERTIFICATE OF AUTHORITY OF ATTORNEY(S)-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, THAT TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a corporation duly organized under the laws of the State of Connecticut, and having its principal office in the City of Hartford, County of Hartford, State of Connecticut, hath made, constituted and appointed, and does by these presents make, constitute and appoint Robert D. Lembke, P. A. Foss, Philip G. Dehn, Terry K. Bartel, Jennifer L. Bookout or Janet R. Nielsen **

of, Omaha, NE, its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred to sign, execute and acknowledge, at any place within the United States, or, if the following line be filled in, within the area there designated , the following instrument(s):

by his/her sole signature and act, any and all bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking and any and all consents incident thereto

and to bind TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, thereby as fully and to the same extent as if the same were signed by the duly authorized officers of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, and all the acts of said Attorney(s)-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This appointment is made under and by authority of the following Standing Resolutions of said Company, which Resolutions are now in full force and effect:

VOTED. That each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, may from time to time appoint Resident Vice Presidents, Resident Assistant Secretaries, Attorneys-in-Fact, and Agents to act for and on behalf of the Company and may give any such appointee such authority as his certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors may at any time remove any such appointee and revoke the power and authority given him or her.

VOTED: That any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the Chairman, the Vice Chairman, the President, an Executive Vice President, a Group Executive, a Senior Vice President, a Vice President, an Assistant Vice President or by a Resident Vice President, pursuant to the power prescribed in the certificate of authority of such Resident Vice President, and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary or by a Resident Assistant Secretary, pursuant to the power prescribed in the certificate of authority of such Resident Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact pursuant to the power prescribed in his or their certificate or certificates of authority.

This Power of Attorney and Certificate of Authority is signed and sealed by facsimile under and by authority of the following Standing Resolution voted by the Board of Directors of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, which Resolution is now in full force and effect:

VOTED: That the signature of each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

(over)

IN WITNESS WHEREOF, TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA has caused this instrument to be signed by its Senior Vice President, and its corporate seal to be hereto affixed this 1st day of July, 1997.

STATE OF CONNECTICUT

} SS. Hartford

COUNTY OF HARTFORD



TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA

By: *George W. Thompson*
George W. Thompson
Senior Vice President

On this 1st day of July, 1997, before me personally came GEORGE W. THOMPSON to me known, who, being by me duly sworn, did depose and say: that he/she is Senior Vice President of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, the corporation described in and which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; and that he/she executed the said instrument on behalf of the corporation by authority of his/her office under the Standing Resolutions thereof.



Marie C Tetreault
My commission expires June 30, 2001 Notary Public
Marie C. Tetreault

CERTIFICATE

the undersigned, Assistant Secretary of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a stock corporation of the State of Connecticut, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Standing Resolutions of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

signed and Sealed at the Home Office of the Company, in the City of Hartford, State of Connecticut. Dated this 13th day of February, 1998.



By: *Rose Gonsoulin*
Rose Gonsoulin
Assistant Secretary

**STATUTORY PAYMENT BOND PURSUANT TO TITLE 34
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)**

KNOW ALL MEN BY THESE PRESENTS:

That, KIEWIT WESTERN CO. (hereinafter called the Principal), as Principal, and Travelers Casualty and Surety Company of America a corporation organized and existing under the laws of the State of CT, with its principal office in the City of Hartford (hereinafter called the Surety), as Surety, are held and firmly bound unto the Flood Control District of Maricopa County, in the County of Maricopa, State of Arizona (hereinafter called the Oblige), in the amount of three million, one hundred forty-two thousand dollars (\$3,142,000), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Flood Control District of Maricopa County, dated the ____ day of _____, 1998 for **Contract FCD 97-33, Old Cross Cut Canal, Phase 4**, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's Subcontractors in the prosecution of the work provided for in the contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of the Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as a part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this 13 day of February, 1998.

J & H Marsh & McLennan
Agency of Record, State of Arizona

Principal
By:

Agency Address and Phone Number:
4041 North Central Avenue
Suite 1700
Phoenix, AZ 85012

BOND NUMBER: 20SB101149441BCM

ATTACH SURETY POWER OF ATTORNEY
COUNTERSIGNED

By: Cindy Juharos
Cindy Juharos, AZ Resident Agent

KIEWIT WESTERN CO.

Daniel C. Howell
(Printed Name) (Signature)

Title: Daniel C. Howell, Vice President

Travelers Casualty and Surety Company of
Surety Seal America

By: Jennifer L. Bookout
Title: Jennifer L. Bookout, Attorney-in-Fact

POWER OF ATTORNEY AND CERTIFICATE OF AUTHORITY OF ATTORNEY(S)-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, THAT TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a corporation duly organized under the laws of the State of Connecticut, and having its principal office in the City of Hartford, County of Hartford, State of Connecticut, hath made, constituted and appointed, and does by these presents make, constitute and appoint Robert D. Lembke, P. A. Foss, Philip G. Dehn, Terry K. Bartel, Jennifer L. Bookout or Janet R. Nielsen * *

of, Omaha, NE, its true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred to sign, execute and acknowledge, at any place within the United States, or, if the following line be filled in, within the area there designated
, the following instrument(s):

by his/her sole signature and act, any and all bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking and any and all consents incident thereto

and to bind TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, thereby as fully and to the same extent as if the same were signed by the duly authorized officers of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, and all the acts of said Attorney(s)-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This appointment is made under and by authority of the following Standing Resolutions of said Company, which Resolutions are now in full force and effect:

VOTED. That each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, may from time to time appoint Resident Vice Presidents, Resident Assistant Secretaries, Attorneys-in-Fact, and Agents to act for and on behalf of the Company and may give any such appointee such authority as his certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors may at any time remove any such appointee and revoke the power and authority given him or her.

VOTED: That any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the Chairman, the Vice Chairman, the President, an Executive Vice President, a Group Executive, a Senior Vice President, a Vice President, an Assistant Vice President or by a Resident Vice President, pursuant to the power prescribed in the certificate of authority of such Resident Vice President, and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary or by a Resident Assistant Secretary, pursuant to the power prescribed in the certificate of authority of such Resident Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact pursuant to the power prescribed in his or their certificate or certificates of authority.

This Power of Attorney and Certificate of Authority is signed and sealed by facsimile under and by authority of the following Standing Resolution voted by the Board of Directors of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, which Resolution is now in full force and effect:

VOTED: That the signature of each of the following officers: Chairman, Vice Chairman, President, Any Executive Vice President, Any Group Executive, Any Senior Vice President, Any Vice President, Any Assistant Vice President, Any Secretary, Any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

(over)

IN WITNESS WHEREOF, TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA has caused this instrument to be signed by its Senior Vice President, and its corporate seal to be hereto affixed this 1st day of July, 1997.

STATE OF CONNECTICUT

} SS. Hartford



TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA

COUNTY OF HARTFORD

By

George W. Thompson

George W. Thompson
Senior Vice President

On this 1st day of July, 1997, before me personally came GEORGE W. THOMPSON to me known, who, being by me duly sworn, did depose and say: that he/she is Senior Vice President of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, the corporation described in and which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; and that he/she executed the said instrument on behalf of the corporation by authority of his/her office under the Standing Resolutions thereof.



Marie C Tetreault

My commission expires June 30, 2001 Notary Public
Marie C. Tetreault

CERTIFICATE

I, the undersigned, Assistant Secretary of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, a stock corporation of the State of Connecticut, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Standing Resolutions of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, in the City of Hartford, State of Connecticut. Dated this 13th day of February, 1998.



By:

Rose Gonsoulin

Rose Gonsoulin
Assistant Secretary

INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the District, Maricopa County, City of Phoenix, their agents, representatives, officers, directors, officials, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney fees, court costs, and the cost of appellate proceedings), relating to, arising out of, or resulting from the Contractor's work or services. The Contractor's duty to defend, hold harmless and indemnify the District, its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property including loss of use resulting therefrom, caused in whole or in part by any act or omission by the Contractor, anyone the Contractor directly or indirectly employs, or anyone for whose acts the Contractor may be liable, regardless of whether it is caused in part by a party indemnified hereunder, including the District.

The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this paragraph.

For all other hazards, liabilities, and exposures: To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the District, its agents, representatives, officers, directors, officials, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney fees, court costs, and the cost of appellate proceedings), relating to, arising out of or resulting from the Contractor's work or services. Contractor's duty to defend, hold harmless, and indemnify the District, its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, injury to, impairment or destruction of property including loss of use resulting therefrom, caused in whole or in part by any act or omission of the Contractor, anyone the Contractor directly or indirectly employs, or anyone for whose acts the Contractor may be liable, regardless of whether it is caused in part by a party indemnified hereunder, including the District.

The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this paragraph.

INSURANCE REQUIREMENTS

Without limiting any of its obligations or liabilities, the Contractor, at the Contractor's own expense, shall purchase and maintain the hereafter stipulated minimum insurance with companies duly licensed, possessing a current A.M. Best, Inc. rating of B++6, or approved unlicensed to do business in the State of Arizona with policies and forms satisfactory to the County.

All insurance required herein shall be maintained in full force and effect until all work required to be performed under the terms of the Contract is satisfactorily completed and formally accepted; failure to do so may, at the sole discretion of the District, constitute a material breach of this Contract.

The Contractor's insurance shall be primary insurance as respects the District, and any insurance or self insurance maintained by the District shall not contribute to it.

Any failure to comply with the claim reporting provisions of the policies or any breach of the policy warranty shall not affect coverage afforded under the policies to protect the District.

The policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the District, its agents, representatives, directors, officers, and employees for any claims arising out of the Contractor's work or service.

The policies may provide coverage which contain deductibles or self insured retentions. Such deductible and/or self insured retentions shall not be applicable with respect to the coverage provided to the District

under such policies. The Contractor shall be solely responsible for the deductible and/or self insured retentions and the District, at its option, may require the Contractor to secure the payment of such deductible or self insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

The District reserves the right to request and to receive, within 10 working days, certified copies of any or all of the above policies and/or endorsements. The District shall not be obligated, however, to review same or to advise the Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve the Contractor from, or be deemed a waiver of the District's right to insist on, strict fulfillment of the Contractor's obligations under this Contract.

The insurance coverage, except Workers' Compensation and Professional Liability, required by this Contract shall name the District, its agents, representatives, officers, directors, officials, and employees as Additional Insureds.

General Liability. The Contractor shall maintain Commercial General Liability insurance with a limit of not less than \$2,000,000 for each occurrence with a \$4,000,000 Products and Completed Operations Limit and \$4,000,000 General Aggregate Limit, and include coverage for bodily injury, broad form property damage, personal injury, products/completed operations and blanket contractual covering, but not limited to, the liability assumed under the indemnification provisions of this Contract, which coverage will be at least as broad as the Insurance Service Office, Inc. Policy Form CG 00011093 or any replacements thereof. The coverage shall not exclude X, C, U.

Such policy shall contain a severability of interest provision, and shall not contain a sunset provision or commutation clause, nor any provision which would serve to limit third party action over claims.

The Commercial General liability additional insured endorsement will be at least as broad as the Insurance Service Office, Inc. Additional Insured, Form B, CG 201011185, or replacements thereof.

Any failure to comply with the reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the District.

If required by this contract, the Contractor subletting any part of the work awarded to the Contractor shall purchase and maintain, at all times during prosecution of the work under this Contract, an Owner's and Contractor's Protective Liability insurance policy for bodily injury and property damage, including death, which may arise in the prosecution of the work or Contractor's operations under this contract. Coverage shall be on an occurrence basis with a limit not less than \$2,000,000 per occurrence, and the policy shall be issued by the same insurance company that issues the Contractor's Commercial General Liability insurance.

Automobile Liability. The Contractor shall maintain Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damage of not less than \$2,000,000 each occurrence with respect to the Contractor's any owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work or services. Coverage will be at least as broad as coverage code 1, "any auto" (Insurance Services Office, Inc. Policy Form CA 00011293, or any replacements thereof). Such insurance shall include coverage for loading and off-loading hazards. If hazardous substances, materials, or wastes are to be transported, MCS 90 endorsement shall be included and \$4,000,000 per accident limits for bodily injury and property damage shall apply.

Workers' Compensation. The Contractor shall carry Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work or services; and Employer's liability insurance of not less than \$100,000 for each accident, \$100,000 disease for each employee, and \$500,000 disease policy limit.

In case any work is subcontracted, the Contractor will require the subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of the Contractor.

Builders' Risk (Property) Insurance. The Contractor shall purchase and maintain, on a replacement cost

basis, Builders' Risk insurance in the amount of the initial Contract amount as well as subsequent modifications thereto for the entire work at the site. Such Builders' Risk insurance shall be maintained until final payment has been made or until no person or entity other than the District has an insurable interest in the property required to be covered, whichever is earlier. This insurance shall include interests of the District the Contractor, and all subcontractors and sub-subcontractors in the work during the life of the Contract and course of construction, and shall continue until the work is completed and accepted by the District. For new construction projects, the Contractor agrees to assume full responsibility for loss or damage to the work being performed and to the structures under construction. For renovation construction projects, the Contractor agrees to assume responsibility for loss or damage to the work being performed at least up to the full Contract amount, unless otherwise required by the Contract documents or amendments thereto.

Builders' Risk insurance shall be on an all-risk policy form and shall also cover false work and temporary buildings and shall insure against risk of direct physical loss or damage from external causes including debris removal, demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's service and expenses required as a result of such insured loss and other "soft costs" as required by the Contract.

Builders' Risk insurance must provide coverage from the time any covered property becomes Contractor's control and/or responsibility, and continue without interruption during construction or renovation or installation, including any time during which the covered property is being transported to the construction installation site, and while on the construction or installation site awaiting installation. The policy will provide coverage while the covered premises or any part thereof are occupied. Builders' Risk insurance shall be primary and not contributory.

If the Contract requires testing of equipment or other similar operations, at the option of the District, the Contractor will be responsible for providing property insurance for these exposures under a Boiler Machinery insurance policy.

Required coverages may be modified by an amendment to the Contract documents.

Certificates of Insurance

Prior to commencing work or services under this Contract, the Contractor shall furnish the District with Certificates of Insurance, or formal endorsements as required by the contract, issued by the Contractor's insurer(s), as evidence that policies providing the required coverages, conditions and limits required by this Contract are in full force and effect. **Such certificates shall identify this Contract number and title.** A \$25.00 administrative fee shall be assessed for all Certificates received without the appropriate contract number and title.

Subcontractor: The Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor.

In the event any insurance policy(ies) required by this Contract is(are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of the work or services and as evidenced by annual Certificates of Insurance.

Insurance evidenced by this Certificate shall not expire, be canceled, or materially changed without fifteen (15) days prior written notice to the District. If a policy does expire during the life of the contract, a renewal Certificate must be sent to the District fifteen (15) days prior to the expiration date.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 CERTIFICATE OF INSURANCE

CONTRACT FCD 97-33

PROJECT TITLE: Old Cross Cut Canal, Phase 4

NAME AND ADDRESS OF INSURANCE AGENCY MIDWEST AGENCIES, INC. 3555 Farnam Street Omaha, NE 68131	INSURANCE COMPANIES AFFORDING COVERAGES	
	Company Letter	A St. Paul Fire & Marine Insurance Co.
	Company Letter	B State of Arizona Self-Insured
	Company Letter	C
	Company Letter	D
	Company Letter	E
NAME AND ADDRESS OF INURED KIEWIT WESTERN CO. 3888 East Broadway Road Phoenix, Arizona 85040 (602) 437-7878 fax: 437-7806	Company Letter	F

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time

CO. LTR	TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE (MM/DD/YY)	EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	COMMERCIAL GENERAL <input checked="" type="checkbox"/> LIABILITY FORM <input checked="" type="checkbox"/> PREMISES OPERATIONS <input checked="" type="checkbox"/> CONTRACTUAL <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> EXPLOSION & COLLAPSE <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS <input checked="" type="checkbox"/> PERSONAL INJURY	KG08000332	03/01/98	03/01/01	GENERAL AGGREGATE	\$4,000,000
A	COMPREHENSIVE AUTO <input checked="" type="checkbox"/> LIABILITY & NON-OWNED <input type="checkbox"/> EXCESS LIABILITY	KA08000009	03/01/98	03/01/01	EACH OCCURRENCE	\$2,000,000
B A	<input checked="" type="checkbox"/> WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ENGINEERS PROFESSIONAL LIABILITY <input checked="" type="checkbox"/> OTHER	SELF-INSURED WVA8000639	03/01/93 03/01/98	03/01/01	STATUTORY each accident EACH CLAIM AND ANNUAL AGGREGATE	\$100,000
In addition to the Flood Control District, add Maricopa County and the City of Phoenix as additional named insured.						

Except for Professional Liability Insurance and Workers' Compensation Insurance, the Flood Control District of Maricopa County is added as an additional insured on those types of policies described herein which are required to be furnished by this contract entered into between the insured and the Flood Control District. To the extent provided in this contract, insured shall hold harmless the Flood Control District of Maricopa County from liability arising out of any services provided or duty performed by insured as required by statute, law, purchase order or otherwise required, with the exception of liability for loss or damage resulting from the sole negligence of Flood Control District, its agents, employees or indemnities. It is agreed that any insurance available to the named insured shall be primary of other sources that may be available. It is further agreed that no policy shall expire, be canceled, or materially changed to affect the coverage available to the District without thirty (30) days written notice to the District. THIS CERTIFICATE IS NOT VALID UNLESS COUNTERSIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE INSURANCE COMPANY.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 2801 West Durango Street
 Phoenix, Arizona 85009

DATE ISSUED February 13, 1998

AUTHORIZED REPRESENTATIVE

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CERTIFICATE OF INSURANCE**

CONTRACT FCD 97-33

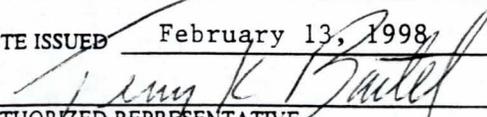
PROJECT TITLE: Old Cross Cut Canal, Phase 4

NAME AND ADDRESS OF INSURANCE AGENCY MIDWEST AGENCIES, INC. 3555 Farnam Street Omaha, NE 68131	INSURANCE COMPANIES AFFORDING COVERAGES	
	Company Letter	A St. Paul Fire & Marine Insurance Co.
	Company Letter	B State of Arizona Self-Insured
	Company Letter	C
	Company Letter	D
	Company Letter	E
NAME AND ADDRESS OF INURED KIEWIT WESTERN CO. 3888 East Broadway Road Phoenix, Arizona 85040 (602) 437-7878 fax: 437-7806	Company Letter	F

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time

CO. LTR	TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE (MM/DD/YY)	EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	COMMERCIAL GENERAL <input checked="" type="checkbox"/> LIABILITY FORM <input checked="" type="checkbox"/> PREMISES OPERATIONS <input checked="" type="checkbox"/> CONTRACTUAL <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> EXPLOSION & COLLAPSE <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS <input checked="" type="checkbox"/> PERSONAL INJURY	KG08000332	03/01/94	03/01/98	GENERAL AGGREGATE	\$4,000,000
					PRODUCTS/COMPLETED OPERATIONS	\$4,000,000
					BODILY INJURY AND PROPERTY DAMAGE	\$4,000,000
					PERSONAL INJURY	\$4,000,000
					EACH OCCURRENCE	\$2,000,000
A	COMPREHENSIVE AUTO <input checked="" type="checkbox"/> LIABILITY & NON-OWNED <input type="checkbox"/> EXCESS LIABILITY	KA08000009	03/01/94	03/01/98	EACH OCCURRENCE	\$2,000,000
					NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	
B A	<input checked="" type="checkbox"/> WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ENGINEERS PROFESSIONAL LIABILITY <input checked="" type="checkbox"/> OTHER	SELF-INSURED WVA8000639	03/01/93 03/01/94	03/01/98	STATUTORY each accident EACH CLAIM AND ANNUAL AGGREGATE	\$100,000
		In addition to the Flood Control District, add Maricopa County and the City of Phoenix as additional named insured.				

Except for Professional Liability Insurance and Workers' Compensation Insurance, the Flood Control District of Maricopa County is added as an additional insured on those types of policies described herein which are required to be furnished by this contract entered into between the insured and the Flood Control District. To the extent provided in this contract, insured shall hold harmless the Flood Control District of Maricopa County from liability arising out of any services provided or duty performed by insured as required by statute, law, purchase order or otherwise required, with the exception of liability for loss or damage resulting from the sole negligence of Flood Control District, its agents, employees or indemnities. It is agreed that any insurance available to the named insured shall be primary of other sources that may be available. It is further agreed that no policy shall expire, be canceled, or materially changed to affect the coverage available to the District without thirty (30) days written notice to the District. THIS CERTIFICATE IS NOT VALID UNLESS COUNTERSIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE INSURANCE COMPANY.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY 2801 West Durango Street Phoenix, Arizona 85009	DATE ISSUED February 13, 1998  AUTHORIZED REPRESENTATIVE
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FLOOD CONTRGL DISTRICT OF MARICOPA COUNTY

CONTRACT FCD 97-33

OLD CROSS CUT CANAL PROJECT

PHASE 4

OSBORN ROAD TO INDIAN SCHOOL ROAD

SUPPLEMENTARY GENERAL CONDITIONS

SPECIFICATIONS:

Except as otherwise amended by these Supplementary General Conditions and the Construction Special Provisions, construction of this project shall be in accordance with all applicable Maricopa Association of Governments (MAG) Uniform Standard Specifications and Uniform Standard Details, dated 1992 including all revisions through 1997, supplemented by the City of Phoenix (COP) Supplemental Details and Uniform Standard Specifications, date July 1994.

PRECEDENCE OF CONTRACT DOCUMENTS:

This Contract and its designated documents, whether taken separately or together, are to be interpreted according to full intent, meaning, and spirit, and shall be deemed to mutually explain each other and to be descriptive of any materials to be furnished and the work to be performed under this Contract. In cases of any difference or discrepancy between the Contract documents, the order of precedence shall be a) Addendum to the Invitation for Bid, b) the Contract form, c) Supplementary General Conditions, d) Construction Special Provisions, e) Project Plans, f) COP Supplemental Details and Uniform Standard Specifications, and g) MAG Uniform Standard Specifications and Uniform Standard Details.

Subsection 101.2 - Definitions and Terms:

1. Change the definition of the phrase "Board of Supervisors" to being the Board of Directors acting under the authority of the laws of the State of Arizona and in their capacity of the Board of Directors of the Flood Control District of Maricopa County.
2. Change the definition of the phrase "Budget Project" to being a project financed by funds set aside in the annual budget or otherwise approved by the Flood Control District of Maricopa County Board of Directors.
3. Add to the definition of the phrase "Contract Documents", the phrase "Supplementary General Conditions".
4. Change the definition of the term "Engineer" to being the person appointed by the Flood Control District of Maricopa County Board of Directors to the office of Chief Engineer and General Manager of the Flood Control District of Maricopa County acting directly or through its authorized representative, the Chief of the Flood Control District of Maricopa County Construction and Maintenance Division.
5. Change the definition for the phrase "Notice of Award" to a letter from the Flood Control District of Maricopa County advising Contractor that it is the successful bidder and the Flood Control District of Maricopa County has accepted its proposal.

6. Change the definition of the term "Owner" to the Flood Control District of Maricopa County, acting through it's legally constituted officials, officers, or employees.
7. Add the definition for Maricopa County Minority Business Office (MBO); the office responsible for administering the Maricopa County Minority and Women Owned Business Enterprise Program.
8. Add the definition for the Maricopa County Minority and Women-Owned Business Enterprise Program as being the Program adopted by the Board of Supervisors effective January 1, 1992.

Subsection 102.4 - Examination of the Plans, Special Provisions, and Site Work: Add the following:

The soil boring logs have been provided in Appendix "A", and the geotechnical report, including ground water conditions, are available for review at the Owner's office, and the Contractors are encouraged to do so. Existing moisture conditions shall be no basis for claim for additional monies or time extensions. The Contractor shall manipulate the existing soil as required to achieve stable soil conditions and the required densities, as well as safe and stable side slopes during construction activities.

The construction of the box culverts and other structures will occur partially below ground water levels. At the time of the preparation of these Supplementary General Conditions, ground water levels were higher than the bottom of the existing Old Cross Cut Canal invert.

Piezometer wells are located along the canal. These wells have been used to monitor ground water elevations. Historical ground water elevation data can be obtained from the District.

Subsection 102.5 - Preparation of Bid: Add the following:

Bids, including the Bidding Schedule, must be legibly written in ink or typed, with all prices given in numerals. In case of a conflict between the unit bid price and the extension, the unit bid price shall govern.

It shall be the responsibility of prospective bidders to determine, prior to submission of a bid, if any addenda have been issued by the Flood Control District. This may be accomplished by calling 602-506-1501. Any addendum issued, if not already bound into the Special Provisions, **shall be attached and included as part of the Specifications** and any quantities on the Bidding Schedule requiring change shall be adjusted to the new figure by pen and ink. **Bids which do not have appropriate addenda attached, show appropriate changes to the Bidding Schedule, and acknowledge receipt of addenda in the Proposal may be invalid.**

The bidder's Arizona State Contractor's License number and the classification under which it proposes to perform the work shall be shown on the proposal. An "A" **General Engineering** License is required for this contract. The two lowest bidders may be required to provide certification of prior satisfactory completion for similar construction and to furnish a copy of their license and the renewal certificate.

Subsection 102.6 - Subcontractors' List: Add the following:

A list of subcontractors and suppliers (including any M/WBE participation) intended to be used on the project shall be submitted with the bid, on the form provided in the Proposal. Although this list will not be considered as final commitment on the part of the successful proposer, any subcontractor changes from those listed must have Owner's written approval prior to work performed on site by a subcontractor.

Subsection 102.7 - Irregular Proposals: Add the following:

- (F) If the Maricopa County Minority and Women-Owned Business Enterprises Assurances Affidavit is not completed and submitted.
- (G) If any addenda are not acknowledged and attached..
- (H) If Owner's bond forms are not used.
- (I) If the entire specifications document is not returned
- (J) If the statement from bidder's insurance carrier as required by Subsection 103.6 is not included.

Subsection 103.6 - Contractor's Insurance: Add the following:

A statement from bidder's insurance carrier shall be included in the proposal certifying that it will furnish the specified kind and amounts of insurance to the bidder if it is awarded the contract; and that it will execute the Certificate of Insurance included in the documents. As required by law, the statement will be from an insurance carrier or carriers authorized to do business in the State of Arizona, or countersigned by an agent of the carrier authorized to do business in the State of Arizona. Concurrently with the execution of the contract, Contractor shall furnish a Certificate of Insurance, using the included Certificate, that names the additional insureds as set out in the Certificate. The Certificate shall also name the additional insureds as Certificate Holders. The types of insurance and the limits of liability shall be as indicated on the included form.

Subsection 103.6.1(D) - Contractor's Insurance: Add the following:

Include additional insureds as indicated on the included Certificate of Insurance.

Subsection 103.6.2 - Indemnification of the Contracting Agency Against Liability: Add the following:

Additionally, Contractor shall execute the Indemnification found in the Contract Documents.

Subsection 104.1 - Work to be Done: Add the following sentence to 104.1.1:

All water for construction purposes, drinking water, lighting, temporary electric power, heat and telephone service shall be arranged and provided for as per requirements of the work by Contractor at his expense.

Add the following to 104.1.2:

All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the Uniform Traffic Control Manual and the City of Phoenix Traffic Barricade Manual, latest revision.

Traffic control shall conform to the requirements established in the Special Provisions and shown on the traffic control plan sheets. Traffic control plans and use of temporary pavement to divert traffic will be required.

For construction of the box culvert and the 48th Street improvements the following traffic control is required:

1. A detour will be required at Indian School Road (ISR) as shown in the plans. The duration for the use of the detour from time of initial disruption to traffic through the restoration of traffic to ISR shall not exceed 120 calendar days. Use of the detour will be necessary for such activities as construction of the box culvert, installation of the SRP ductbank, installation of a segment of a proposed new 16-inch water line, and the reconstruction of the intersection, and restoration of the traffic signals.
2. The detour at ISR where it crosses the existing Old Cross Cut Canal (OCC) must be constructed in such a manner that provides a minimum conveyance capacity for the canal of 1,000 cfs through the detour. The Contractor will provide design calculations and construction plans for the detour

crossing of the canal prepared by a Professional Engineer Registered in the State of Arizona. The design calculations and plans will convey the minimum 1,000 cfs flow through the detour crossing. The design and construction of the crossing must be done in such a manner to ensure that the crossing will be protected from flows in the canal so that the detour crossing is not damaged or washed out. The calculations and plans will be submitted to the Engineer for review at least 30 calendar days prior to beginning the detour construction.

3. The Contractor must provide a minimum of 45 calendar days advance written notice to the City of Phoenix Real Estate Division prior to the beginning of construction for the ISR detour. Contact Dennis Althoff at 262-7219 for the address to which the letter should be sent. The Contractor must also provide 30 calendar days advance notice prior to the beginning of construction for the ISR detour to Safeguard Security Company (southeast corner of ISR and canal), contact John Jennings at 957-2851, and to the R&G Park (southwest corner of ISR and canal), contact Steve Holmquist at 271-8582.
4. Access for emergency vehicles through the ISR intersection, and to and from Arcadia Drive must be provided at all times. The Contractor will coordinate emergency vehicle traffic control with the fire station at Thomas Road at least 30 days in advance of implementing traffic control plans at ISR. Contact the City of Phoenix Fire Department, Chief Joe Bushong at 262-6370.
5. The Contractor shall maintain security company access along the east side of the OCC corridor from the alley south of the security company through Station 115+00 during the duration of the ISR detour. Access to the Security Company from the east will be provided by others for a maximum of six months. If additional access or extended duration of access is required for the Security Company beyond the 120 calendar days being allowed for the detour at ISR, the Contractor shall provide this access at his expense and at no cost to the project.
6. Northbound 48th Street north of Osborn Road will be closed to traffic, and Osborn Road will remain open to traffic at all times.

In all cases during construction access will be provided for emergency vehicles, trash collection, and school buses as required. The Contractor will notify schools, trash collection, emergency services, etc. at least 30 days in advance of implementing the traffic control plans which may affect their activities.

Subsection 104.2.3 - Changes:

The Owner may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in any one or more of the following:

- A) Drawings, designs, or specifications;
- B) Method or manner of performance of the work;
- C) Owner-furnished facilities, equipment, materials, services, or site;
- D) Directing acceleration in the performance of the work.

Any other written or oral order from the Owner that causes a change shall be treated as a change order under this section provided that the Contractor gives the Owner written notification within two work days after receipt of such direction stating:

- A) The date, nature, and circumstances of the conduct regarded as a change;
- B) The particular elements of the contract performance for which the Contractor is seeking an equitable adjustment under this section, including any price or schedule adjustments;
- C) The Contractor's estimate of the time by which the Owner must respond to the Contractor's notice to minimize cost, delay, or disruption of performance.

The Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its provisions. Except as provided in this section, no order, statement, or conduct of the Owner shall be treated as a change or entitle the Contractor to an equitable adjustment. If any change under this section causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, the Owner shall make an equitable adjustment and modify the contract in writing.

The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to diligently continue performance. No proposal for the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

Subsection 104.2.4 - Cost Estimates or Price Proposals:

The Contractor and any lower-tier subcontractors shall submit itemized cost estimates or price proposals for any owner-directed change order or Contractor-initiated claim.

Cost estimates or pricing proposals shall be itemized to include direct labor by man-hours, individual craft, hourly wage rate and verifiable labor burden. Other direct costs shall include rental and operator rates for rented or owned equipment, material trucking expenses and other costs clearly identified and directly allocable to contract performance. Material costs shall be itemized by item description, quantity(s) for each item, unit price per item, including applicable sales tax markup, and extended total price per item. The Contractor shall provide copies of material supplier quote sheets, invoices or purchase orders, as appropriate.

Lump sum cost estimates or price proposals shall be rejected and returned to the Contractor for itemization as described above. Failure of the Contractor to submit properly itemized cost estimates or price proposals shall not constitute an excusable delay and result in a change order being unilaterally priced as the Owner's fair estimated price.

Subsection 104.2.6 - Value Engineering:

A) **General.** The Contractor is encouraged to voluntarily develop, prepare, and submit value engineering change proposals (VECPs). The Contractor shall share in any instant contract savings realized from accepted VECPs, in accordance with paragraph (f) below. The Owner reserves the right to make alterations to the contract, in accordance with procedures elsewhere within this contract. Such alterations will not be eligible for inclusion in any VECP.

B) **Definitions.**

Contractor's development and implementation costs means those costs the Contractor incurs on a VECP in developing, testing, preparing, and submitting the VECP as well as those costs incurred by the Contractor to make the changes required by the Owner's acceptance of the VECP.

Owner costs means those owner costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistical support. The term does not include the normal administrative costs of processing the VECP.

Instant contract savings means the estimated reduction in Contract cost of performance resulting from acceptance of the VECP, minus the allowable Contractor's development and implementation costs, minus subcontractors' development and implementation costs (see paragraph (g) below).

Value engineering change proposal (VECP) means a proposal that (1) requires a change to the contract; (2) results in reducing the contract price or estimated cost without impairing essential

functions or characteristics; and (3) does not involve a change in deliverable end item quantities, schedule, or a change to the contract type.

C) **VECP Preparation.** As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change affects contractually required schedule and cost reporting, it shall be revised to incorporate proposed VECP modifications. The VECP shall include the following:

- (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effects of the change on the end item's performance. All design changes must be submitted on 24"x 36" standard drawing sheets along with supporting calculations. Each drawing sheet and at least the content sheet of the calculations shall be sealed by an Engineer registered in the State of Arizona.
- (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revision.
- (3) A separate, detailed cost estimate for the affected portions of the existing contract requirements and the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (g) below.
- (4) A description and estimate of costs the Owner may incur implementing the VECP, such as test and evaluation and operating and support costs. This is an estimate based only on the Contractor's understanding of additional efforts to be expended by the Owner, should the VECP be accepted. The final cost will be determined by the Owner.
- (5) A prediction of any effects the proposed change would have on collateral costs to the agency, i.e., costs of operation or maintenance.
- (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
- (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved and previous Owner actions, if known.

D) **Submission.** The Contractor shall submit VECPs to the Owner's Engineer.

E) **Owner Action.**

- (1) The Owner shall notify the Contractor of the status of the VECP within 15 calendar days after receipt from the Contractor. If additional time is required, the Owner shall notify the Contractor within the 15-day period and provide the reason for the delay and the expected date of the decision. The Owner will process VECPs expeditiously; however, it shall not be liable for any delay in acting upon a VECP.
- (2) If the VECP is not accepted, the Owner shall notify the Contractor in writing, explaining the reasons for rejection.

- (3) The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Owner.
- (4) Any VECP may be accepted, in whole or in part, by the Owner's award of a change order to this contract, citing this subsection. The Owner may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a change order incorporates a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The Owner's decision to accept or reject all or any part of any VECP shall be final and not subject to disputes or otherwise subject to litigation.

F) Cost Sharing.

- (1) **Rates.** The Owner's share of savings is determined by subtracting the Owner's costs from instant contract savings and multiplying the result by 50 percent. The Contractor's share shall be the remaining 50 percent.
- (2) **Payment.** Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a change order to this contract to accept the VECP, reduce the contract price or estimated cost by the amount of instant contract savings, and provide the Contractor's share of savings by adding the amount calculated to the contract price.

- G) Subcontracts.** The Contractor may include an appropriate value engineering clause in any subcontract. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Owner under this contract, but shall exclude any value engineering incentive payments; provided that these payments shall not reduce the Owner's share of the savings resulting from the VECP.

105.1 - Authority of Engineer: Add the following:

105.1.1 - Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to subsections 105.3.1 and 106.4, but such time shall not exceed 20 calendar days. Engineer will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. Engineer will record time required by Engineer and Engineer's Consultants in evaluating substitutes proposed or submitted by Contractor pursuant to subparagraphs 105.3.1 and 106.4(B) and in making changes in the Contract Documents (or in the provisions of any other direct contract with Owner for work on the project) occasioned thereby. Whether or not Engineer accepts a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer and Engineer's Consultants for evaluating each such proposed substitute item.

105.3 - Conformity with Plans and Specifications: Add the following :

105.3.1 - Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by Engineer will be similar to that provided in subparagraph 106.4(B).

Subsection 105.5 - Cooperation of Contractor: Add the following:

105.5.1 - Partnering

The Owner intends to encourage the foundation of a partnering relationship with the Contractor and its subcontractors. This partnering relationship will be structured to draw on the strength of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance, intended to achieve completion within budget, on schedule, and in accordance with plans and specifications.

This partnering relationship will be bilateral in makeup. Any cost associated with effectuating partnering will be covered by the Bid Item. The initial partnering workshop shall be scheduled after award of the contract, and prior to the Notice to Proceed, and shall be facilitated by a third party competent in the fundamentals of partnering, and mutually acceptable to Contractor and Owner. The Contractor shall be responsible for scheduling, coordinating, and hiring the third party facilitator, and planning all of the partnering meetings in consultation with the Engineer. The Owner will be responsible to notify and coordinate attendance at the partnering meetings by other agencies. To achieve the desired partnering relationships, the Contractor will need to encourage attendance by its major subcontractors on the project. Follow-up workshops will be held periodically throughout the duration of the contract as agreed to by the Contractor and Owner.

An integral aspect of partnering is the resolution of disputes in a timely, professional, and non-adversarial manner. Alternative dispute resolution (ADR) methodologies will be encouraged in place of the more formal dispute resolution procedures. ADR will assist in promoting and maintaining an amicable working relationship to preserve the partnering relationship. ADR in this context is intended to be a voluntary, non-binding procedure available for use by the parties to this contract to resolve any dispute that may arise during performance.

Payment for Partnering will be made on the basis of invoices, and will be for a total amount not to exceed the amount shown in the bid schedule for the item.

ITEM 105-1 - PARTNERING

Subsection 105.6 - Cooperation with Utilities: Add the following:

An attempt has been made to determine the location of all underground utilities, drainage pipes, and structures; however, it shall be the Contractor's responsibility to cooperate with the pertinent utility companies so that any obstructing utility installation(s) may be adjusted. The location of the underground and overhead utilities as shown on the plans is based on the best available information. Subsequent to the preparation of these plans and specifications additional pothole activities have been undertaken at the Indian School Road intersection. It appears that the location of some of the existing under ground irrigation and gas lines is not as shown in the plans. The Contractor shall not assume that what is shown in the plans represents an exact location of the line. No guarantee is made to the accuracy of the location shown on the plans. The Contractor shall determine for himself the exact location of all utilities. Should Contractor's operations result in damage to any utility the location of which has been brought to its attention, he shall assume full responsibility for such damage. Contractor shall contact Arizona Blue Stake (telephone number 263-1100) a minimum of two (2) working days before beginning any underground work. In addition, Blue Stake notification(s) shall be maintained on a current basis.

The following phone numbers should put the Contractor in contact with the proper personnel:

Flood Control District of Maricopa County,
Fred Fuller

602/506-1501 or 4728

City of Phoenix Water Services Dept.
Jerry Arakaki

602/261-8229

Dimension Cable, John Barnett	602/352-5860 x-156
Salt River Project (Electrical), Dee Strubhar	602/236-4849
Salt River Project (Water Operations), Pete Cady Jon Moore	602/236-3295/5836 602/236-3701
Southwest Gas, Howard Warren	602/484-5335
US West Communications, Frank Fuentes Larry Pirtle	602/831-4231 602/831-4696

Salt River Project Electrical Facilities:

Salt River Project (SRP) has 12kV overhead lines located along the east side of the canal corridor. There also are approximately two (2) locations where 12kV overhead lines cross the canal corridor. Contractors, their employees, and all other construction personnel working on this project must be warned of the danger and instructed to take adequate protective measures, including maintaining minimum clearances between all overhead lines and all construction equipment and personnel.

Prior to construction, the power poles located along the east side of the canal will have been removed by others. From Weldon Avenue south, the overhead lines (SRP, USWest, and CATV) have been relocated to an underground joint use conduit ductbank along the east side of the canal. The approximate location (based on design plans and not as-builts) of the underground ductbank is shown in the plans. The Contractor must call for Blue Stake to locate the new ductbanks prior to construction. From Weldon Avenue north, the overhead lines have been relocated to temporary poles along the east side of the canal corridor. The Contractor will exercise extreme caution when working in the vicinity of these overhead lines.

As part of this contract new under ground ductbank shall be installed in accordance with Special Provisions Section 450, Appendix "B", and the SRP plans attached to and made a part of the construction plans. The installation work shall be done by a Contractor selected from the approved SRP bidders list included in Appendix "C". No other Contractors will be approved for the ductbank installation. The work will include the installation of ductbank from Weldon Avenue, near roadway Station 289+75, to north of Indian School Road, and numerous ductbank crossings to the east and west along the OCC corridor, over the box culvert and under the new 48th Street pavement. In addition, existing ductbank stubouts at roadway Station 282+75 and 287+75 must be extended to the west beyond the west curb limit prior to the installation of the new 48th Street roadway. The Contractor will be compensated directly by SRP for the ductbank installation in accordance with Section 450.

Southwest Gas (SWG) Company Facilities:

An existing 8" high pressure gas line is located along the east side of the OCC corridor, and under the new 48th Street pavement reconstruction limits. The Contractor shall determine the location and the depth of this gas line prior to any construction activities which may impact the gas line.

The Contractor shall exercise extreme caution when working near the location of this high pressure gas line.

There is a 4-inch and an 8-inch SWG high pressure gas line both oriented east/west along the north side of ISR that will require temporary support or relocation. The 8-inch gas line cannot be relocated and must be supported in place by the Contractor. The 4-inch gas line may be supported in place by the Contractor, or the Contractor may coordinate with SWG to have the line temporarily removed by either cutting and capping (summer only), or by relocating around the work area. The Contractor must coordinate with SWG at least 45 calendar days in advance of the need to have the line temporarily removed or relocated. The Contractor must allow sufficient time in his schedule for SWG to remove or relocate the line and then to restore the line to its present location prior to reconstruction of the intersection.

An existing 2-inch gas line service to the R&G Park must be relocated to accommodate the installation of the 16-inch water line at the Indian School Road intersection. The Contractor shall coordinate with SWG at least 60 days in advance of the need to have the gas line relocated. The cost of the relocation will be paid for by others at no cost to the Contractor.

Payment for supporting in place the 4-inch and/or 8-inch gas lines and/or to have the 4-inch gas line temporarily cut/capped or relocated by SWG at ISR will be made on the basis of the lump sum price bid, and shall include all materials, labor, and work activities by the Contractor and/or by SWG necessary to support in place and/or remove and reinstall the gas lines.

ITEM 105-2 - GAS LINES

USWest (USW) Teleco Facilities:

There are three known under ground USW facilities in ISR that require temporary support by the Contractor. These include a four 4-inch conduit ductbank encased in concrete and two direct buried cables. The Contractor must coordinate with USW at least 60 days in advance of any activity which may disturb the ductbank or cables. The Contractor may choose to remove the ductbank encasement, with approval of USW, and must allow USW to remove the transite ducts if this is determined necessary by USW. The Contractor must allow 20 working days in the schedule to permit USW to reinstall new ducts as required, and at their cost. The installation of new ducts would occur during the culvert backfill operations. The new conduit will be supplied by USW. The new ductbank will be backfilled using a cement/sand slurry.

Any damage to the ductbank or cables caused by the Contractor will be the responsibility of the Contractor, and any and all repair costs and lose of service revenues will be borne solely by the Contractor at no cost to the project.

Payment for the supporting in place of the existing USW ductbank and cables at ISR shall be made on the basis of the lump sum price bid, and shall include all materials and labor necessary to support in place the ductbank and cables, and for the cement/sand slurry backfill.

ITEM 105-3 – DUCTBANK AND CABLES

Sanitary Sewer and Water Lines:

There is an existing 8-inch sanitary sewer line located along the east side of the canal. The Contractor shall protect the sewer line from construction activities, and from the impact of ground water dewatering, and of surface water such as irrigation water, storm water, and nuisance water which may flow in and into the canal during the box culvert construction.

A segment of new 16-inch water line will be installed within the limits of the ISR intersection being disturbed for construction of the box culvert and intersection improvements. The Contractor shall install this water line segment in accordance with Section 610 of the Special Provisions and the City of Phoenix plans made a part of these construction documents.

Salt River Project Irrigation Facilities:

The Old Cross Cut Canal serves as both an SRP irrigation water conveyance facility and a storm water collection facility. At any time irrigation water, storm water, or nuisance water may flow in and into the canal from surface flows, storm drains, subdrains, and Arizona Canal releases, as well as high ground water. The Contractor will be responsible to protect his work and existing utilities accordingly.

There are numerous SRP irrigation pipes located along the canal. The Contractor will protect these irrigation lines from damage during construction. This includes a new irrigation pipe recently installed by SRP along the west side of the OCC corridor to replace the previously existing delivery ditch along the west side of the corridor. The line is shown on the plans, and the Contractor shall verify its location prior to any construction activities in this area.

There also possibly exists other under ground irrigation lines, both active and abandoned in the ISR intersection which may impact construction. The Contractor shall determine the location of these lines so that his excavation activities and excavation limits protect in place the active irrigation lines.

North of Osborn Road there are two ground water subdrains and tailwater drains which function to drain high ground water and irrigation tailwater. These are free flowing drains with no shutoff control.

The typical water delivery schedule affecting the tailwater pipes is as follows:

1. From October through March – a 28 day water delivery cycle, with 7 days of water delivery.
2. From April through September – a 14 day water delivery schedule, with 7 days of water delivery.
3. These water delivery schedules are subject to change depending on the water demands of the SRP customers, and other factors.

The Contractor should contact Pete Cady at 236-3295 regarding SRP water releases from the Arizona Canal into the Old Cross Cut Canal, or Jon Moore at 236-3701 about water delivery schedules affecting the subdrains. The Contractor shall establish a line of communication with SRP regarding Arizona Canal water releases, water deliveries, etc.

The Contractor will participate in a pre-construction meeting with SRP to be held at least 72 hours prior to the start of any construction activities within the Old Cross Cut Canal. The Contractor will notify the Canal Watermaster, Pete Cady, at 236-3295 to schedule the meeting date and time. A District representative shall also be invited to the meeting.

There are two SRP wells located along the west side of the Old Cross Cut Canal, one north of Clarendon Avenue and the other south of the Arizona Canal. These wells have been used in the past by SRP to draw down the ground water table in the vicinity of the wells. The wells have an effective zone of influence for ground water draw down of up to a distance of approximately 500 feet from the wells. SRP will for a fee analyze the affect of the wells on ground water draw down in the vicinity of the project, and if it is determined feasible and beneficial, will for a fee operate the pumps for this purpose. If the Contractor is interested in the possible use of these wells by SRP for the purpose of mitigating the high ground water conditions at the north end of the project site, he should contact SRP, Walker Milici at 236-5363, to make the appropriate arrangements for the well evaluation, and the use of the wells for ground water dewatering. SRP estimates that approximately a six week test and evaluation period is required to determine the benefits of using these wells for ground water dewatering in the vicinity of the project. The cost for the evaluation and use of the wells will be considered incidental to the cost of dewatering as provided for in Subsection 107.10 and Bid Item 107-5.

The Contractor must maintain access at all times during construction to all irrigation structures and facilities along the west side of the canal from Osborn Road to Indian School Road, including the well site north of Osborn Road, for the purpose of operation and maintenance access by SRP personnel.

Subsection 105.8 - Construction Stakes, Lines, and Grades: Add the following:

- A. Engineer will furnish the project survey control line together with a Bench Mark which the construction contractor will use to set line and grade for all construction. All other surveying required for the project shall be the contractor's responsibility. Engineer will not set any construction stakes.
- B. Before any construction work is started, Engineer shall perform all base surveys and cross sections of existing conditions that may be required as a basis for quantity determination.
- C. The Contractor shall submit original construction surveyor's notes duly signed by a Registered Land Surveyor to the Engineer at the end of the project. Copies of the survey notes shall be submitted to the Engineer during construction as and when requested.
- D. As-built plans sealed by an Engineer registered in the State of Arizona shall be provided by the Contractor to the Owner prior to project close out.

Subsection 106.1 - Source of Materials and Quality: Add the following:

Select Material, Aggregate Base, Mineral Aggregate, concrete, steel products and pipe shall be obtained from commercial sources. Contractor shall pay all royalties, or any other charges or expenses, incurred in connection with the securing and hauling of the material. Contractor will be required to furnish Engineer with a list of its proposed commercial sources prior to use, and shall present certificates stating that the material produced from any commercial sources is in accordance with the Uniform Standard Specifications and these Supplementary General Conditions.

Subsection 106.4 - Trade Names and Substitutions: Replace with the following:

Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quantity required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be accepted by Engineer under the following circumstances:

(A) "Or-Equal": If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

(B) Substitute Items: If in Engineer's sole discretion an item does not qualify as an "or-equal" item under subparagraph 106.4 (A), it will be considered a proposed substitute item. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by Engineer will include the following and may be supplemented in the Special Provisions and as Engineer may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor. If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall first make written application to Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general

design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice contractor's achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for work on the project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish additional data about the proposed substitute.

(C) Contractor's Expense: All data to be provided by Contractor in support of any proposed "or-equal" or substitute item will be at Contractor's expense.

Subsection 106.5 – Contractors Marshaling Yards: Add the following:

The Contractor shall obtain approval of the Engineer when using vacant property to park and service equipment and store materials for use. The Contractor will obtain prior written approval of the property owner for such use and submit a copy of the approval to the Engineer prior to use of the property.

The construction and Contractor's work area is defined as being between the right-of-way lines as shown on the plans along the east side and the west side of the Old Cross Cut Canal corridor. These right-of-way lines were obtained from the City of Phoenix quarter section maps for right-of-way.

Subsection 107.2 - Permits: Replace with the following:

Contractor shall obtain all permits and licenses, pay all charges, fees, taxes, and provide all notices necessary and incidental to the due and lawful prosecution of the work.

The District will obtain a Dewatering Permit from the Arizona Department of Water Resources (ADWR). This permit is required for the pumping of ground water which will be required as part of construction. The permit will be provided to the Contractor at the pre-construction meeting.

Installation and abandonment of any dewatering wells (use of well points, etc.) will be done by a well drilling Contractor that holds a current well drillers's license pursuant to A.R.S. § 45-495. All dewatering wells will be installed and registered according to the Arizona Department of Water Resources rules and regulations. The Contractor must provide to the Engineer at the time of award of the contract, and no later than at the pre-construction meeting the name and license number of the well drilling contractor who will install any well points to be used for dewatering.

Any wells to be drilled for dewatering on this project must be identified and drill cards must be issued by ADWR prior to the Contractor commencing drilling. If sump pumps are to be used, ADWR must know the number of measuring points to be used in the pump system. Each well or sump pump will be issued a well registration number for purposes of annual reporting of the amount of water withdrawn. The District has applied for the dewatering permits. The Contractor must provide the well and sump pump information to the Engineer a minimum of two weeks prior to the date on which well drilling or sump pump installation is to commence. The permits and drill cards then will be issued by ADWR.

It will be necessary for the Contractor to monitor and maintain a record of the total amount of ground water pumped on a daily basis, and provide a copy of this record to the Engineer on a weekly basis. It will be necessary for the Contractor to provide the necessary gages and/or meters to quantify the amount

of water pumped in gallons per day. The cost of this monitoring will be incidental to other related activities for which compensation is provided.

Subsection 107.2.1 - NPDES Permit Requirements: Add the following:

- A. This project is subject to the National Pollutant Discharge Elimination System (NPDES) Storm water requirements for construction sites under the Environmental Protection Agency (EPA) General Permit for Arizona. Under provisions of that permit, the contractor shall be designated as permittee, and shall take all necessary measures to assure compliance with the NPDES General Permit for Arizona as well as all other applicable Federal, State and local laws, ordinances, statutes, rules and regulations pertaining to storm water discharge. As the permittee, the contractor is responsible for preparing, in a manner acceptable to the EPA, all documents required by this regulation, including but not necessarily limited to:
1. Storm water Pollution Prevention Plan (SWPPP) for the project, including certification of compliance form. Contractor shall be required to develop, implement, update and revise the SWPPP, as necessary, in order to assure compliance with the EPA permit requirements. The SWPPP shall be retained on the project site at all times during construction.
 2. Notice of Intent (NOI) to assure compliance with the NPDES General Permit for Arizona, including certification of signatures.
 3. Notice of Termination (NOT) of coverage under NPDES General Permit for Arizona.
- B. Preliminary copies of the NOI and the SWPPP shall be submitted to Owner during the preconstruction meeting and shall be subject to review by Owner prior to implementation.
- C. Contractor shall submit the completed and duly signed NOI forms not less than forty-eight (48) hours prior to the initial start of construction on the project to the following agencies:

EPA Storm water Notice of Intent
P.O. Box 1215
Newington, VA 22122

A copy of the completed NOI form shall be submitted to the following:

Storm water Coordinator
Arizona Department of Environmental Quality
P.O. Box 600
Phoenix, AZ 85001-0600

Tom Lange
Development Services Department
City of Phoenix
200 W. Washington Street
Phoenix, AZ 85003

Failure by the contractor (or subcontractors of any tier) to submit NOI's within the mandated time frame shall result in delay of the construction start date, and no claim for extension of time will be granted for such delay. A copy of the completed NOI shall be posted at the construction site.

- D. Inspections of all storm water pollution control devices on the project shall be performed by Contractor on a monthly basis and following each rainfall of 0.50 inches or more in a 24-hour period

at the project site as required under provisions of the NPDES General Permit for Arizona. Contractor shall prepare reports on such inspections and retain the reports for a period of three years following the completion of the project. Inspection reports shall be submitted monthly to Owner along with progress payment requests. Additionally, contractor shall maintain all storm water pollution control devices on the project in proper working order, which shall include cleaning and/or repair during the duration of the project.

- E. Contractor warrants that its employees and subcontractors of any tier and their employees shall at all times comply with all applicable laws, ordinances, statutes, rules and regulations set forth by all federal, state and local governments and the Environmental Protection Agency in connection with NPDES Permitting requirements and laws and regulations pertaining to air, groundwater and surface water quality. Fines and penalties imposed by the EPA against Owner or the contractor, for contractor's failure to comply with any of the requirements of NPDES General Permit of Arizona, shall be borne by the contractor.
- F. Upon project completion, acceptance and demobilization, contractor shall submit its completed, duly executed NOT form to the EPA, with a copy to the Arizona Department of Environmental Quality (and the appropriate municipality), at the address listed in Section (B) above, thereby terminating all NPDES permit coverage for the project. Contractor shall then surrender to Owner copies of the SWPPP, inspection information and all other documents prepared and maintained by the contractor in compliance of the NPDES General Permit. Contractor shall retain the originals of such documents for a period of three (3) years following the completion of the project.
- G. The Lump Sum price for the SWPPP shall include all material, labor, and all other costs relating to the preparation, installation and maintenance of the SWPPP during project construction, including assuring proper operation of the pollution control devices installed, and all maintenance, cleaning, and disposal costs associated with clean-up and repair following storm events, runoff or releases on the project. The Lump Sum price for the SWPPP shall be inclusive of all costs, and no additional claims shall be made by Contractor under any other specification provision of these documents, including Change Conditions. Payment for this bid item shall be upon final completion and acceptance of the project, as per Section 109.1.
- H. Copies of all required forms and guidance for preparing the SWPPP are available in the "Drainage Design Manual for Maricopa County, Volume III Erosion Control". The manual is available at the Flood Control District, 2801 West Durango Street, Phoenix, Arizona 85009.

Payment for NPDES/SWPPP permit requirements shall be made on the basis of lump sum for all work described in Subsection 107.2.1 for

ITEM 107-1 - NPDES/SWPPP PERMITS

Subsection 107.4 – Archeological Reports: Add the following:

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the Contractor, or any person working on his behalf, shall be immediately reported to the Engineer. The Contractor shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Engineer. An evaluation of the discovery will be made by the Engineer and the Salt River Project and/or Bureau of Reclamation Archaeologist to determine appropriate actions to prevent the loss of significant cultural or scientific resources.

Subsection 107.5: Add the following:

The entire construction site shall be considered a "Hard Hat Area" and all personnel in the area will be required to wear a hard hat.

Subsection 107.5.2 - Compliance with the Arizona Communication Standard: Add the following: Owner will provide Contractor with Material Safety Data Sheets (MSDS) for any products known to exist on the site that are deemed health hazards. Contractor will provide a copy of Owner-provided MSDS to all subcontractors.

Contractor will provide Owner and all subcontractors with MSDS for any products that have or are deemed health hazards that will be brought onto the site or created on the site by either Contractor or by any subcontractors.

Contractor will provide Owner with a statement certifying that all personnel (Contractor and subcontractor) employed by Contractor or by a subcontractor on the job site have received the required Hazard Communication Standard training.

Subsection 107.5.4 – Contractor Health & Safety Provisions: Add the following:

The project location is within the East Central Phoenix and East Washington study areas of the State of Arizona Water Quality Assurance Revolving Fund (WQARF). The WQARF is located within the boundaries of a designated Federal Superfund site. The WQARF program is designed to study and clean-up areas of degraded groundwater. Environmental assessments of the project location are available for review at the District. These assessments have not indicated the presence of degraded groundwater beneath or in the project location that would impose health hazards to worker safety. The District will monitor groundwater quality weekly from the first date that groundwater is encountered and provide the Contractor with the results. The Contractor shall include provisions for a health and safety plan as required under OSHA (29 CFR Part 1910.120), to be implemented if degraded groundwater of a hazardous nature is in fact encountered during construction activities. Three copies of the health and safety plan will be submitted at the pre-construction meeting for review by the Engineer.

Payment for preparation of the Health and Safety plan as required under OSHA (29 CFR Part 1910.120) shall be made on a lump sum basis.

ITEM 107-2 – PREPARATION OF HEALTH AND SAFETY PLAN

Subsection 107.5.4.1 – Contractor's Status During any Hazard Remediation:

If remediation of any discovered hazard interferes with the project's critical path, then the CPM and project schedule will be reviewed and revised as mutually acceptable by Owner and Contractor to minimize the impact to the **total project schedule**. An extension in contract time for any delay to Contractor then resulting will be granted by Owner in accordance with Subsection 108.7.

If the delay impacts the CPM in such a manner that Contractor is prevented from continuing work on any portion of the project, and Owner issues a suspension of work order, then Contractor shall be entitled to compensation in the form of a **one-time payment** of Demobilization and Remobilization costs, which shall be no more than 6 percent of the original bid item for mobilization.

Contractor's implementation of the Health and Safety Plan under Subsection 107.5.4. will be compensated in accordance with Subsection 109.5 ACTUAL COST OF WORK.

Subsection 107.6.3 – Public Information and Notification: Add the following:

The Contractor shall employ a specialty public information service as a subcontractor to provide the community relations program for the project as described herein. The name and address of the public information subcontractor shall be submitted with the bid as specified in subsection 102.6 of the Supplementary general Conditions. Contractor shall work closely with his subcontractor in developing and carrying out the community relations program, but shall not expect to actually perform the work of providing the public information services. Contractor shall submit a history of the subcontractor's qualifications and experience in public information services at the pre-construction conference for

acceptance by the Engineer. The community relations program shall be designed to run the full length of calendar days in the contract for this project. the program will include but not be limited to:

1. Distributing a preconstruction information letter to all residents, business, schools, etc. within an area bounded by Indian School Road and Thomas Road, and by 44th Street and 52nd Street.
2. Printing and distribution of public notices and/or newsletters.

The Contractor will use these or other means to inform the local citizens of necessary operations which create high noise levels, street closures, limited access, detour locations, haul route and material delivery routes, hours of construction and disruption of bus, trash, school bus and other delivery/pick-up routes.

The Contractor will be required to furnish a private line telephone to be used solely for receiving incoming calls from local citizens with questions or complaints concerning construction operations or procedures. The Contractor shall publish this phone number and maintain a 24-hour answering service. The answering service shall be operated by Contractor personnel during all hours that work is being performed on the job site. The Contractor shall maintain a log of incoming calls, responses, and action taken which shall be submitted to the Engineer weekly and/or upon request.

Prior to the start of work, the Contractor shall notify, by letter, all affected businesses and residents of construction plans and schedules within the geographic area identified above. In addition, all schools and emergency services which serve the geographic area will also be notified even though they may be located outside the geographic area described above. The letter shall contain, as a minimum, the following information:

1. Name of Contractor
2. 24-hour telephone complaint number
3. Brief description of the project
4. Name of Contractor project Superintendent
5. Name of Engineer
6. Name of area supervisor
7. Construction schedule including anticipated work hours
8. Traffic regulations including lane restrictions
9. City of Phoenix Street Transportation 24-hour phone number

The Contractor shall submit a Public Information and Notification Plan to the Engineer at the pre-construction meeting. No payments shall be made for this item until the Engineer approves the plan.

The plan and work which is eligible for reimbursement shall include: meetings with impacted businesses, schools, emergency services, residents, etc.; scheduling; preparation and distribution of newsletter at least bi-weekly; and maintaining a 24-hour telephone hot line for complaints.

The Contractor shall submit a final report/evaluation of the Public Information and Notification process performed for this project. This report shall be submitted before the Contractor receives final payment.

Payment will be based on invoices, and will be for a total amount not to exceed the amount shown in the bid schedule for the item, "PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE", for work performed in notifying and coordinating with the local population impacted by this project. To cover the cost for administration and supervision, the General Contractor may add an amount equal to not more than 5 percent of the accumulated total invoiced billing for actual public information services provided by

a Subcontractor. This cost for administration and supervision will be considered included in the "PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE".

ITEM 107-3 – PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE

Subsection 107.6.4 - Project Signs:

Contractor shall provide and install two project information signs, one at each end of the project, before beginning construction. The signs will inform the public of the forthcoming project, construction dates, and suggested alternate travel routes. Project signs shall include the names of all agencies participating in the project. Signs shall be constructed in accordance with the "Project Sign Information" drawing to be provided to the Contractor at the pre-construction meeting. The signs shall be installed at the location(s) approved by the Engineer. The Contractor shall maintain the signs as necessary, and update the information as requested by the Engineer. Payment shall be made according to the allowance in the Bidding Schedule in installments of 50% upon installation, and the remaining 50% upon final payment for the work.

ITEM 107-4 - PROJECT SIGNS ALLOWANCE

Subsection 107.9 – Protection and Restoration of Property: Add the following:

The Contractor will protect-in-place existing fences and trees and other landscaping along the project right-of-way limits.

Trees and other landscaping which are directly in conflict with the Contractor's ability to construct the project features may be removed. No large trees will be removed without the written approval of the Engineer. This specifically applies to the large trees located at the R&G Park.

The Contractor will coordinate with the City of Phoenix for the removal of any landscaping necessary for the construction of the box culvert north of Indian School Road. This shall include existing landscaping along the west side of the paved driveway to the funeral home. This landscaped area may be minimally disturbed by the Contractor. The Contractor shall maintain as functional all existing underground irrigation systems so as not to disturb or adversely affect other landscaping outside the construction area.

The Contractor may utilize the existing paved driveway north of Indian School Road and west of the funeral home, however, any damage to the pavement caused by the Contractor's use shall be repaired by the Contractor at no cost to the project.

The Contractor will remove and dispose of any excess dirt and asphalt pavement debris stockpiles that may be located along the canal as generated by the recent underground utility relocation work by SRP and USW.

The Contractor shall exercise care when excavating or removing dirt in or along the canal so as to minimize the amount of dirt contamination which gets into the canal.

The Contractor must contact Brian Butler at the COP at 262-4051 at least 30 calendar days prior to any construction activities north of Indian School Road which will impact the existing landscaping. The Contractor shall protect in place any existing landscape irrigation system that may be encountered during these construction activities. The Contractor shall maintain the system in operating condition, including the rerouting of the lines as required, so as not to cause a loss of irrigation water to the landscaping and grass beyond the limits of disturbance caused by construction.

Subsection 107.10 - Contractor's Responsibility for Work: Add the following:

Contractor is advised that the work will be subject to flows of water of varying amounts. Owner assumes no responsibility for notifying Contractor of any anticipated flows, nor for any damages incurred by Contractor to its equipment, to any of the Contractor's work, or to existing utilities along the canal as a result of any flows of water, as described below:

- A. The Old Cross Cut Canal serves as both an SRP irrigation water conveyance facility and a storm water collection facility. At any time surface water such as irrigation water, storm water, and nuisance water may flow in and into the canal. The Contractor shall protect the construction and the existing utilities along the canal from these waters flowing in and into the canal. The Contractor shall contact SRP regarding releases of SRP irrigation water into the Old Cross Cut Canal. The Contractor shall establish a line of communication with SRP regarding water releases, including releases from the Arizona Canal. The Contractor shall also participate in a pre-construction meeting with SRP as described in Subsection 105.6.
- B. The Contractor's construction of the concrete box culvert shall be done in such a manner that provides similar conveyance capacity as the existing canal provides in its present condition, or 2,000 cfs, whichever is less.
- C. The Contractor shall be responsible for controlling and handling storm water and other flows throughout the construction site, both surface drainage and channel flows, except channel flows which exceed 150 cfs as measured by the District. When measured channel flows exceed 150 cfs and result in damage to the work site, the owner will pay actual cost of damage repair. Actual cost is defined as materials, labor, and equipment utilized to restore damaged work area(s). This actual cost also does not include or apply to any damage to or loss of Contractor's equipment left in the canal. Payment for damage repair work will be in accordance with Section 109.5 of MAG Specifications, titled Actual Cost Work. No other compensation will be considered or allowed, including home office or job site overhead.
- D. The Contractor shall provide the District with its plan for managing flows in the canal at least 14 days in advance of implementing the plans so that the District can determine what impact the plans may have on the function of any gages. The gages may have to be relocated and/or re-rated accordingly.
- E. Ground water encountered in the area of construction may be pumped from the excavation limits back into the canal downstream of the work area. The ground water infiltration rate has been estimated at approximately $(0.05 \text{ gpm/ft/ft}) \times (d) \times (P)$, where d =depth below groundwater in feet, and P =perimeter of trench at that depth in feet.
- F. The project geotechnical report recommends the use of a granular free draining material to a depth of one to two feet under the box culvert be used to facilitate dewatering of the excavation for construction of the box culvert. If the Contractor elects to use such material it shall be compacted to a uniform density of not less than 85% to achieve a satisfactory subgrade in accordance with MAG for the construction of the box culvert. The use of such material will be at the discretion of the Contractor, and no VE considerations will be given to the use or non-use of the material. The cost shall be incidental to construction activities for which such material may be used.
- G. Installation and abandonment of any wells installed for dewatering purposes will be done by a well drilling Contractor that holds a current well drillers' license pursuant to A.R.S. § 45-495. All dewatering wells will be installed and registered according to the Arizona Department of Water Resources rules and regulations.

- H. It will be necessary for the Contractor to monitor the total amount of ground water pumped on a daily basis. The Contractor must provide the necessary gages and/or meters to quantify the amount of water pumped in gallons per day. A daily log will be kept by the Contractor, and the data will be provided to the Engineer on a weekly basis.
- I. Pumping equipment used to manage water in the canal will be electric powered. Gasoline or other fueled pumping equipment will not be permitted without the prior approval of the Engineer. The Contractor will contact Joe Penunuri of SRP at 236-4853 for electrical service.
- J. Because of the high ground water table and the potential buoyant forces acting on the box culvert, the ground water must be maintained at or below the bottom of the new box culvert until the minimum of 4 feet of backfill has been placed over the top of the box culvert.
- K. The Old Cross Cut Canal serves as both an irrigation conveyance facility and a storm water runoff collection system. In order to not worsen storm water drainage conditions along the canal, potentially causing flooding problems for the nearby residential areas, the Contractor will be required to accept storm water runoff and other canal flows.
- L. Prior to the reconstruction of 48th Street, the catch basins and swales along the east side of 48th Street shall be installed to capture storm water runoff from the east and convey the water into the canal or the box culvert.
- M. The Contractor shall take all necessary action to protect the public from the construction work area.
- N. During construction flows in the canal could undermine the existing box culverts which carry surface streets across the canal. This can happen when the existing canal invert is excavated below the bottom of the existing box culvert invert. The Contractor shall take all necessary precautions to ensure that the stability and integrity of the existing box culverts are not jeopardized, damaged, or impacted in any way during construction while the culverts are being used to convey the surface streets and traffic across the canal.

Payment for ground water dewatering as described in Subsection 107.10, Parts E, F, G, H, and I shall be made on the basis of lump sum for all labor, materials, gravel bedding, equipment, and appurtenances necessary to perform the dewatering, including but not limited to pumping equipment, wells, gages and/or meters, electrical service, and sumps.

ITEM 107-5 – GROUND WATER DEWATERING

Subsection 108.1 - Notice to Proceed: Delete Paragraph (A) and replace with the following:

- (A) Contractor shall commence work within seven (7) calendar days after the date of the Notice to Proceed and complete all work within three hundred thirty (330) calendar days beginning the day following the effective date specified in the Notice to Proceed.

Subsection 108.2 - Subletting of Contract: Add the following:

For this project, Contractor shall perform, with its own organization, work amounting to 50 percent or more of the total contract cost.

Subsection 108.4 - Contractor's Construction Schedule: Delete in its entirety and replace with the following:

Contractor shall submit a proposed work schedule to the Engineer for review before starting work, using Primavera or other program that is acceptable to the Engineer. Weekly updates shall be submitted to the District's Construction Coordinator at the weekly coordination meeting.

Subsection 108.4.1 - Contractor's Billing Schedule: Add the following:

Contractor shall furnish the Engineer an Estimated Billing Schedule which shall include an estimated amount of each billing for the total project at the preconstruction conference, and thereafter at monthly intervals as agreed to between the Contractor and Engineer.

Subsection 108.5 - Limitation of Operations: Add the following:

Should Contractor elect to perform any work after regular working hours, on weekends, or legal holidays, "with or without written approval of Engineer", any charges incurred by Owner for inspection of the work, surveys or tests of materials will be deducted from monies due or to become due to Contractor.

Subsection 108.9 - Failure to Complete on Time: Add the following:

The actual cost per calendar day incurred by Owner for Consultant Administrative and Inspection Services on this project will be added to the daily charges as indicated by TABLE 108, LIQUIDATED DAMAGES, and will be deducted from monies due or to become due to Contractor for each and every calendar day that work shall remain incomplete after the time specified for the completion of the work in the proposal, or as adjusted by Engineer. Nothing contained in this provision shall prohibit Owner from deducting from monies due or to become due to Contractor for any other costs incurred by Owner directly attributable to the delay in completing this contract.

Subsection 109.2 - Scope of Payment: Add the following:

In addition to the contained provisions, the work under this section shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, supplies and incidentals to the project site; the establishment of all offices, buildings and other facilities necessary for work on the project, and for all other work operations that must be performed and costs incurred prior to beginning work on the various items on the project site.

Subsection 109.7 - Payment for Bond Issue and Budget Projects: Add the following:

- (A) To third paragraph, add: Payment or release of retained funds shall be made to the contractor within thirty (30) days following final payment to the contractor (reference (B) following), and contractor furnishing to Engineer satisfactory receipts for all labor and material billed and waivers of liens from any and all persons and subcontractors holding claims against the work. Additionally, Contractor shall furnish a completed Certificate of Performance to Engineer evidencing it has satisfactorily discharged all its duties in connection with the work to be performed under this Contract. The form of Certificate of Performance shall be provided to Contractor by the Engineer.
- (B) Delete second and third paragraphs and replace with: The final payment will be made to Contractor by Owner within thirty (30) days following receipt of Engineer's final estimate and receipt by Owner of Consent of Contractor's Surety to said final payment.

If payment will be longer than thirty (30) days as aforesaid, Owner will provide Contractor specific written findings for reasons justifying the delay in payment.

- (C) The Contractor's representative and the Engineer shall make a determination of the monthly pay quantities on the last Wednesday of each month. The monthly pay estimate shall then be signed by the Contractor and submitted to the Engineer on the first day of the next month.

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 97-33
OLD CROSS CUT CANAL PROJECT
PHASE 4
OSBORN ROAD TO INDIAN SCHOOL ROAD**

SPECIAL PROVISIONS

SECTION 201 – CLEARING AND GRUBBING

Clearing and grubbing shall conform to Section 201 of the MAG Uniform Standard Specifications and COP Supplement except as modified herein.

Subsection 201.1 – Description

Add the following:

The work consists of removal and disposal of all objectionable material as necessary for the construction of this project. Prior to starting this work the Contractor must verify the location of existing utilities which may be damaged during this work. The Contractor shall adjust and/or otherwise protect these utilities from damage.

Subsection 201.5 – Payment

No payment will be made for clearing and grubbing as such; the cost thereof shall be included in the bid price for the removal, construction, or installation of other items to which said clearing and grubbing are incidental or appurtenant.

SECTION 202 – MOBILIZATION

Add this section to the MAG Uniform Standard Specifications.

Subsection 202.1 – Description

Add the following:

The work under this section shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, supplies and incidentals to the project site; the establishment of all offices including a field office for the exclusive use of the Engineer as described below, buildings and other facilities necessary for work on the project, and for all other work and operations that must be performed and costs incurred prior to beginning work on various items on the project site.

Field Office

This work shall consist of providing and maintaining a furnished field office for the exclusive use of and occupancy by the Engineer and the Engineer's staff.

The office shall be a building or mobile trailer erected at a location convenient to the project. The office may be in the same building or mobile trailer containing office space to be used by the Contractor, provided that such office is separated from the area used by the Contractor by a wall or door with an adequate locking device and has at least two doors to the outside.

The Contractor shall obtain approval from the property owner upon site selection of the field office.

The Contractor may furnish equivalent facilities in an existing building provided such facilities and building are located to provide convenient service.

The field office shall be an approved and weatherproof building or mobile trailer providing a minimum of 300 square feet of clear floor space, not including the toilet area. The structure shall have a minimum ceiling height of seven (7) feet and shall be provided with weatherproof doors equipped with adequate locking devices. Windows shall also be provided with adequate locking devices. The Contractor shall also provide the following:

- a. Lighting – Electric light, non-glare type luminaries to provide a minimum illumination level at desk height level.
- b. Heating and Cooling – Adequate electrically powered equipment to maintain an ambient air temperature of 72 degrees F plus or minus 8 degrees.
- c. Telephone, answering, and paper FAX machine - A telephone with an outside line for the exclusive use of the Engineer. The Contractor will pay for the cost of the line and local calling charges. Long distance charges made on this line will be paid for by the District.
- d. Toilet – A commode and wash sink in a separately enclosed room within the building or mobile trailer, properly ventilated and complying with applicable sanitary codes. Contractor shall provide water service.
- e. Maintenance – The Contractor shall maintain all facilities and furnished equipment in good working condition.
- f. Fire Extinguisher – Two non-toxic, dry chemical, fire extinguishers meeting Underwriters Laboratories, Inc. approval for Class A, Class B, and Class C fires with a minimum rating of 2A: 20B: 10C.
- g. Electricity – Contractor shall provide electric power and pay for all electric services.
- h. Furnishings – Two office desks with drawers, two office chairs (padded, swivel type), one drafting table (adjustable height 3 feet by 6 feet), one conference table, eight folding chairs, one draftsman's stool, and a four drawer legal file cabinet.

The office shall be fully equipped and made available for the Engineer's use and occupancy prior to the start of any Contract work and not later than 10 days after the date of notice to proceed. The Engineer will notify the Contractor, in writing, of the acceptability of the field office provided. The Contractor shall maintain the field office in operating condition until seven (7) days after acceptance of the Contract work.

All facilities shall be maintained in good operating condition and appearance by the Contractor for the designated period, after which all portable buildings or trailers, fencing, surfacing, and utilities shall be removed from the site, the areas cleaned and seeded if required and left in a neat and acceptable condition.

Subsection 202.2 – Payment

Payment shall be made on the basis of the lump sum price bid and shall be full compensation for supplying and furnishing all materials, facilities, and services and performing all work involved as specified herein. The lump sum price bid shall not exceed three (3%) percent of the total project bid amount exclusive of mobilization. No additional payment will be made for occupancy and services during periods of contract extension of time due to engineering changes.

ITEM 202-1 – MOBILIZATION

SECTION 205 – ROADWAY EXCAVATION

Roadway excavation shall conform to Section 205 of the MAG Uniform Standard Specifications and COP Supplement except as modified herein.

Subsection 205.1 – Description

Add the following:

The work consists of removal and disposal of all objectionable material as necessary for the construction of this project. Prior to starting this work, the Contractor must verify the location of existing utilities which may be damaged during this work. The Contractor shall adjust and/or otherwise protect these utilities from damage.

Subsection 205.8 - Payment

Payment for roadway excavation shall be made on the basis of the price bid per cubic yard for:

ITEM 205-1 – ROADWAY EXCAVATION

SECTION 206 – STRUCTURE EXCAVATION AND BACKFILL

Structure excavation and backfill shall conform to Section 206 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 206.1 – Description

Add the following:

This work consists of the removal, placing and compaction of material around the concrete box culverts, headwalls, wingwalls and catch basin inlets, to the lines and grades designated on the plans, to the top of the box culverts, headwalls, wingwalls or inlets, or as directed by the Engineer. The work also includes the removal of abandoned utilities within the excavation. The ends of any remaining utilities outside the excavation shall be capped as designated in the plans and to the satisfaction of the Engineer. The Contractor shall note the location of the 15-inch sanitary sewer and other existing utilities along the corridor and shall protect in place these utilities during all phases of construction activities.

A vertical geocomposite wall drain system shall be placed between the walls of the box culvert or wingwalls and the structure backfill as shown on the plans.

The Geocomposite Wall Drain System shall be of composite construction, consisting of a supporting structure of drainage core material and a geotextile filter fabric permanently bonded to the core material on one side only. The geocomposite shall be resistant to commonly encountered chemicals and hydrocarbons, and resistant to ultraviolet exposure.

The drainage core material shall consist of a preformed, stable, polymer plastic material with a cusped, nipped, or geonet structure. The drainage core shall provide support for and shall be bonded to the geotextile filter fabric at intervals not exceeding 1-1/8 inches in any direction. Its preformed structure shall permit free water flow through the core. The core shall have at least 14 square inches per square foot of flat area in contact with the geotextile fabric to support the fabric. The core material shall additionally conform to the following physical requirements:

<u>PROPERTY</u>	<u>REQUIREMENT</u>	<u>TEST METHOD</u>
Thickness with fabric, inch	0.23 min.*	ASTM D1777
Compressive strength, psf	6,000 psf min.	ASTM D1621
Transmissivity	4.0 min.	ASTM D4716
Gradient = 1.0,		
Normal stress = 3,000 psf, gal/min./foot		

*Min. – Minimum average roll value, i.e., the average test result for a lot shall meet or exceed the minimum values listed when sampled and tested according to the specified test method.

The geocomposite core shall be furnished with an approved method for connecting with the weep holes as shown on the plans. These fittings shall allow entry of water from the core, but shall not allow intrusion of backfill material into the core.

The geotextile filter fabric shall be laminated onto or adhere to the side of the drainage core which will face the structure backfill. The geotextile fabric shall be a non-woven polyester or polypropylene fabric meeting the following minimum average roll values:

<u>PROPERTY</u>	<u>REQUIREMENT</u>	<u>TEST METHOD</u>
Weight, oz./sq. yd.	3.5	ASTM D3776-84
Grab tensile strength, lbs.	90	ASTM D4632-86
Grab elongation at break, %	50 min., 115 max.	ASTM D4632-86
Mullen burst strength, psi	140	ASTM D3786
Trapezoidal tear strength, lbs	40	ASTM D4533-85
Puncture strength, lbs	40	ASTM D3787
Apparent opening size, U.S. Standard sieve size	30 – 100	ASTM D4751-87
Permittivity, sec -1	.10	ASTM D4491-85
UV stability, %	70	ASTM D4355-84

Minimum average roll values represent the average test results for a lot in the weaker direction when sampled according to ASTM D4354 and tested according to the test method specified above.

A minimum 4-inch wide flap of geotextile fabric shall extend beyond both longitudinal edges of the geocomposite core. The geotextile fabric shall cover the full length of the core.

The identification, packaging, handling and storage of the geocomposite wall drain material shall be in accordance with ASTM D4873. Geocomposite wall drain shall be furnished in rolls, or in another acceptable manner, wrapped with a suitable protective covering to protect the fabric from mud, dirt, dust, debris or harmful ultraviolet light. The wall drain material shall be free of defects or flaws which significantly affect its physical properties at the time of delivery and installation. Each roll or package shall be labeled or tagged to provide identification sufficient to determine the product type, manufacturer, quantity, lot number, roll number, date of manufacture, shipping date, and the project number and name to which it is assigned. Geocomposite wall drain materials shall be stored on the site or at another location approved by the Engineer in a manner which protects them from the elements. If stored outdoors, the materials shall be elevated and protected with a light colored, opaque, waterproof cover. At no time shall the geocomposite wall drain materials be exposed to direct sun light for a period exceeding 14 days.

The concrete surface of the structure against which the geocomposite drain is to be placed shall be free of soil, debris and excessive irregularities that will prevent intimate contact between the concrete surface and the drain. The geocomposite drain shall be installed with the single fabric surface in contact with the backfill material behind the structure surface.

Unless otherwise specified, geocomposite wall drains shall be constructed in horizontal courses and in accordance with the details shown on the project plans. While being rolled or laid out along the length of the wall, the geocomposite shall be firmly secured either by using adhesive or 1.5-inch to 2-inch long concrete nails with approved washers or wood battens not less than four square inches in area. The adhesive or alignment of the core shall not affect the drainage area or downward flow within the core.

The spacing of concrete nails shall be as directed by the Engineer, but shall not be more than four feet apart, both horizontally and vertically. When nails are utilized, there shall be at least one horizontal row of nails in each course of geocomposite.

Horizontal seams shall be formed by utilizing the 4-inch flap of geotextile fabric extending from the upper geocomposite course and lapping over the top of the fabric on the next lower course. The fabric flap shall be securely fastened to the lower fabric by means of a continuous strip of 3-inch wide, waterproof plastic tape.

Where vertical splices are necessary at the end of a geocomposite roll or panel, an 8-inch wide continuous strip of geotextile fabric may be placed, centering over the seam and continuously fastened on both sides with the 3-inch wide, waterproof plastic tape.

As an alternative method of splicing, either horizontally or vertically, rolls of geocomposite drain material may be joined together by turning back the fabric at the roll edges and interlocking the cuspatious approximately 2 inches. For overlapping in this manner, the fabric is then lapped over and tightly taped beyond the seam with the 3-inch wide, waterproof tape. Interlocking of the core shall always be in the direction of water flow.

To prevent soil intrusion, all exposed edges of the geocomposite drainage core shall be covered by tucking the 4-inch fabric lap over and behind the core edge. Alternatively, a 12-inch wide strip of fabric may be utilized in the same manner, taping it to the exposed fabric 8 inches in from the edge with a continuous strip of 3-inch wide, waterproof, plastic tape and folding the remaining 4 inches over and behind the core edge.

Should the fabric become damaged during installation by tearing or puncturing, the damaged section shall be cut out and replaced completely. If, in the judgement of the Engineer, the damage is not serious enough to warrant removal, the damaged area may be repaired by overlaying with a piece of fabric, large enough to cover the damaged area and provide a 4-inch overlap on all sides, and taping it in place with 3-inch wide strips of waterproof, plastic tape.

Structure backfill shall be placed immediately next to the geocomposite drain. Care shall be taken during the backfill operation not to damage the geotextile surface of the drain. Care shall also be taken to avoid excessive settlement of the backfill material. The geocomposite drain, once installed, shall not be exposed for more than 14 days prior to backfilling.

Supporting documentation including, but not limited to, product information sheets, installation procedures and recommendations, recommended use, and project references shall be submitted by the supplier or manufacturer to the Engineer for pre approval.

Geosynthetic materials shall be furnished in protective covers capable of protecting the materials from harmful environmental conditions such as ultraviolet rays, abrasion, extreme heat and water. Storage of the materials will be in a manner to prevent damage, contamination, or deterioration of the materials.

Subsection 206.4 – Structure Backfill

Add the following:

Structure backfill shall be placed in horizontal lifts not to exceed six inches in compacted thickness and shall be compacted to between 82 and 90 percent of the maximum density at a moisture content between optimum and optimum plus three percent as determined in accordance with ASTM D-2922 and D-3017. Compaction equipment or methods which may cause excessive displacement or may damage structures shall not be used. Hand operated compaction equipment shall be used adjacent to structures.

Compaction operations shall be accomplished by mechanical methods. Water settling or jetting shall not be permitted.

Structure Backfill Type 1 Material:

Shall not contain stones larger than three inches in diameter, chunks of clay, or other deleterious materials. Structure Backfill Type 1 material may be obtained from either of the following two sources:

- a. The top ten feet of on-site excavation as measured from the existing ground level at the lowest edge of pavement of the project excavations.
- b. Any import source which can provide material meeting the following requirements.

Imported Structure Backfill Type 1 material, if required, shall conform to the following gradation (Arizona Test Method 201):

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
3 inch	100
3/4 inch	60 - 100
No. 8	35 - 80
No. 200	0 - 30

The plasticity index of imported Structure Backfill Type 1 material shall not exceed 15 when tested in accordance with the requirements of AASHTO T90.

The Contractor shall provide to the Engineer documentation of compliance to the backfill requirements for all imported materials to be used for Structure Backfill Type 1.

Structure Backfill Type 1 shall be placed against the box culvert walls for a minimum width of four feet (4') and around all catch basin inlets with limits being the excavated area around the perimeter and to the top of the inlet structure.

Structure Backfill Type 2 Material:

May be obtained from any portion of the project excavations.

Structure backfill material shall not be placed against the box culvert side walls until the top slab is in place and the concrete for both the side walls and the top slab has developed a strength of not less than 3,200 psi in compression as specified in Section 725 of the MAG Standard Specifications.

The geotechnical report is available for review by the Contractor, and it is the Contractor's responsibility to conduct all field tests, soil borings, or site examinations required to determine the suitability of the existing soils within excavation areas for use as structure backfill.

Subsection 206.5 - Payment

No payment will be made for structure excavation including removal and disposal of excess excavated material, and no payment will be made for structure backfill, the cost thereof for both excavation and backfill shall be included in the bid price for the construction of the double box culvert.

The quantity of geocomposite drain shall be measured to the limits as shown on the box culvert detail sheet.

Payment for the geocomposite drain shall be made on the basis of the price bid per square yard, complete in place for:

ITEM 206-1 - GEOCOMPOSITE DRAIN

SECTION 211 – FILL CONSTRUCTION

Fill construction shall conform to Section 211 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 211.1 – Description

Add the following:

This work shall consist of placing fill material over the top of the box culverts and structures, constructing embankments and mounds, and general fill construction for grading to the line and grade shown on the plans.

Subsection 211.2 – Placing

Add the following:

Due to the groundwater conditions and resulting buoyancy forces, fill material shall be placed over the concrete box culvert to a minimum depth of 4 feet or to the elevations shown on the plans, and in accordance with Subsection 107.10. This shall be done when the concrete has developed a strength of not less than 3,200 psi in compression as specified in Section 725 of the MAG Uniform Standard Specifications. The top 8 inches of fill shall consist of dirt with no rocks greater than 1-inch in size, to accommodate the future planting (by others) of Bermuda grass.

Subsection 211.3 – Compacting

Add the following:

All fill construction areas shall be compacted to a uniform density of not less than 90 percent of maximum density at a moisture content of between plus or minus three percent of optimum as determined in accordance with ASTM D-2922 and D-3017.

Subsection 211.5 – Measurement

Add the following:

The quantity of fill construction shall be measured to the limits as shown on the detail entitled "Limits of Payment for Structure Excavation, Structure Backfill and Fill Construction Items Associated with the Construction of the Concrete Box Culvert", and the grading plans.

Subsection 211.6 – Payment

Payment for fill construction shall be made on the basis of the price bid per cubic yard for:

ITEM 211-1 – FILL CONSTRUCTION

SECTION 215 – EARTHWORK FOR OPEN CHANNELS

Earthwork for open channels shall conform to Section 215 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 215.1 – Description

Add the following:

The work shall consist of excavation of the open channel surface feature above the box as modified herein. The work shall include construction of all drainage swales and other grading features requiring excavation outside the limits of the structure excavation.

All areas excavated for the surface feature shall be graded and compacted to a uniform density of not less than 95 percent of maximum density.

Subsection 215.8 – Payment

Payment for excavation of drainage swales and related grading features shall be made on the basis of the price bid per cubic yard for:

ITEM 215-1 – EARTHWORK FOR OPEN CHANNELS (EXCAVATION)

SECTION 301 – SUBGRADE PREPARATION UNDER PAVEMENT

Subgrade preparation shall conform to Section 301 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 301.1 – Description

Add the following:

The work consists of preparing the subgrade for the pavement for the multi-use path, pavements on 48th Street, the side street connections, Arcadia Drive, and the Indian School Road intersection, and includes relocating existing mailboxes to the right-of-way line as called for on the plans.

Subsection 301.8 – Payment

Payment for subgrade preparation under pavement for the multi-use path, 48th Street, the side street connections, Arcadia Drive, and the Indian School Road intersection, and includes compensation for mailbox relocations and shall be made on the basis of price bid per square yard for:

ITEM 301-1 – SUBGRADE PREPARATION UNDER PAVEMENT

SECTION 310 – UNTREATED BASE

The placement and compaction of aggregate base course shall conform to Section 310 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 310.1 – Description

Add the following:

Aggregate base course for the multi-use path shall be placed to a minimum depth of four inches on compacted subgrade as shown in the typical sections in the plans.

Subsection 310.4 – Payment

Payment for the ABC shall be made on the basis of the price bid per cubic yard to neat lines shown on the plans.

ITEM 310-1 – AGGREGATE BASE COURSE

SECTION 321 – ASPHALT CONCRETE PAVEMENT

Asphalt concrete pavement shall conform to Sections 321 and 710 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 321.1 – Description

Add the following:

The asphalt concrete used for the surface course on 48th Street, the side street connections, Arcadia Drive, the Indian School Road intersection, and the driveway extensions shall be Type D-1/2.

The asphalt concrete used for the base course on 48th Street, the side street connections, Arcadia Drive, and the Indian School Road intersection shall be Type A 1-1/2.

The asphalt concrete used for the multi-use path shall be Type C-3/4.

Prior to placing the Type A 1-1/2 asphalt concrete base course, the subgrade shall be scarified, graded and compacted to a uniform density of not less than 95 percent for a depth of not less than nine inches.

After construction and backfilling of the box culvert and before reconstruction of 48th Street the new SRP ductbank must be installed in accordance with Section 450 and the SRP ductbank plans, including extending two existing ductbank service lateral stubouts to the west and located south of Weldon Avenue.

Prior to placing the multi-use path, the Contractor shall install 6-inch PVC sleeves for future irrigation under the path as shown in the landscape plans and as described in Section 440 of these Special Provisions.

Prior to placing the new 48th Street pavement, the Contractor shall install 3-inch PVC sleeves for future irrigation under the "traffic footfalls" as shown in the plans and as described in Section 440 of these Special Provisions.

Subsection 321.9 – Payment

No separate payment will be made for the construction, removal or clean up of any temporary pavement, and the cost of this temporary pavement will be included in the bid items to which such temporary pavement is incidental or appurtenant.

Payment for asphalt concrete pavement shall be made on the basis of the price bid per ton, which price shall be full compensation for the item complete in place for:

ITEM 321-1 – ASPHALT CONCRETE PAVEMENT C-3/4

ITEM 321-2 – ASPHALT CONCRETE PAVEMENT D-1/2

ITEM 321-3 – ASPHALT CONCRETE PAVEMENT A-1 ½

SECTION 329 – TACK COAT

Tack coat shall conform to Section 329 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein..

Subsection 329.7 – Payment

Payment for emulsified bituminous tack coat shall be made on the basis of the price bid per ton bid for:

ITEM 329-1 – TACK COAT

SECTION 339 - CONCRETE MEDIAN ISLANDS

Add this section to the MAG Uniform Standard Specifications

Subsection 339.1 - Description

The work under this section shall consist of furnishing all materials, equipment, labor and incidentals required to construct the four median islands at the intersection of 48th Street and Indian School Road. All concrete curb, gutter, sidewalk slab and median nose shall conform to Section 340 of these Special Provisions. The concrete paving stone shall conform to Section 342 of these Special Provisions. The two-foot strip of asphalt concrete pavement replacement beyond the perimeter of the north two median islands shall conform to Section 336 of the MAG Uniform Standard Specifications and COP Supplements.

Subsection 339.2 - Payment

Payment for the four concrete median islands shall include all saw cutting, pavement removal, excavation, subgrade preparation, curb, gutter, sidewalk slab, concrete median nose, aggregate base course, clean washed sand, paving stones, asphalt concrete, and all other materials, equipment, labor and incidentals and shall be made on the basis of the lump sum price bid for:

ITEM 339-1 - CONCRETE MEDIAN ISLANDS

SECTION 340 – CONCRETE CURB, GUTTER, SIDEWALK, DRIVEWAY ENTRANCE AND EDGING

All concrete curb and gutter, mountable curb, sidewalk, sidewalk ramps, driveway entrances, concrete median nose, and concrete edging along the multi-use path shall conform to Section 340 of the MAG Uniform Standard Specification and COP Supplements except as modified herein.

Subsection 340.1 – Description

Add the following:

The concrete for the edging along the multi-use path shall be colored using a “light brown” color admixture conforming to Davis Color “Flag Stone Brown #64” as manufactured by Davis Colors, or approved equal. The color shall be added at the rate of 2 pounds per 94 pound sack of cement. A test panel shall be made and the concrete color shall be approved by Engineer prior to use. Cost of coloring shall be incidental to the cost of the concrete.

The concrete edging along the multi-use path shall receive a broom finish.

After construction and backfilling of the box culvert and before reconstruction of 48th Street, including new curb and gutter, the new SRP ductbank must be installed in accordance with the SRP ductbank plans.

Subsection 340.6 – Payment

Payment for concrete curb and gutter, mountable curb, and concrete edging complete in place shall be made on the basis of the price bid per linear foot for:

- ITEM 340-1 – CONCRETE CURB AND GUTTER, MAG DET. 220, TYPE A**
- ITEM 340-2 – CONCRETE CURB AND GUTTER, MAG DET. 220, MODIFIED TYPE A**
- ITEM 340-3 – CONCRETE SINGLE CURB, MAG DET. 222, MODIFIED TYPE B**
- ITEM 340-4 – 6" X 6" CONCRETE EDGING**
- ITEM 340-5 - MOUNTABLE CURB AND GUTTER**

Payment for concrete sidewalk and driveways, and concrete median nose shall be made on the basis of the price bid per square foot and will include full compensation for all concrete, and all asphalt replacement beyond the concrete apron, grading, subgrade preparation, and all incidentals required to complete the item in place.

- ITEM 340-6 – CONCRETE SIDEWALK, COP DET. P-1230**
- ITEM 340-7 – CONCRETE DRIVEWAY, 9-INCH SECTION**
- ITEM 340-8 - CONCRETE MEDIAN NOSE**

Payment for concrete sidewalk ramps shall be on the basis of the price bid per each for:

- ITEM 340-9 - CONCRETE SIDEWALK RAMP, COP DET. P-1234, TYPE B**
- ITEM 340-10 - CONCRETE SIDEWALK RAMP, COP DET. P-1234, MODIFIED TYPE B**
- ITEM 340-11 - CONCRETE SIDEWALK RAMP, COP DET. P-1235, MODIFIED TYPE C**

SECTION 342 - CONCRETE PAVING STONE

Concrete paving stone shall conform to Section 342 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 342.1 - General

Add the following:

This work shall consist of the installation of concrete paving stone as shown in the plans for the traffic footfalls, intersection medians, and the crosswalks.

Subsection 342.2.2 - Concrete Paving Stones

Delete the existing paragraph and replace with:

The concrete paving stones shall be as per ASTM C-936 which requires a compressive strength of 8,000 psi. The thickness of the paving stones shall be 3-1/8" and the length and width approximately 4"x8". The paving stones shall be "Holland-Stone" as manufactured by Pavestone Co. or approved equal. The color of the paving stones shall be "River Red" and "Charcoal", placed as shown in the plans. The Contractor shall submit two samples of the whole paving stone for both colors to the Engineer for approval prior to any work.

Subsection 342.2.4 - Header

Delete the existing paragraph and replace with:

A single curb concrete edge shall be placed at the north and south boundaries of the concrete paving stones extending from the west lip of gutter to the east lip of gutter. This single curb shall be Type "B" per MAG Detail 222 and as modified on the plans. The top of the single curb shall be placed flush with the final grade of the adjacent paving stones and asphalt concrete pavement.

Subsection 342.2.5 - Concrete Base Course

Delete the existing paragraph and replace with:

A 6-inch thick concrete base course shall be poured on a minimum of 6-inches of subgrade compacted to a minimum of 95% density. The surface of the concrete base course shall be tested with a 10-foot straightedge and shall not vary more than plus/minus 1/8-inch in 10 feet. Concrete shall be Class A per Section 725 of the MAG Specifications.

Subsection 342.4 - Measurement and Payment

Delete the existing paragraph and replace with:

Payment for concrete paving stone installed as part of the intersection medians will be incidental to the lump sum cost for installation of the median islands as called for in Section 339.

Measurement shall be by the square foot. Payment shall be full compensation for all labor, materials, tools, and equipment required to complete the work, including but not limited to the concrete paving stones, sand bedding, 6-inch concrete base course, incidental pavement sawcutting and replacement, complete in place, and shall be made on the basis of the price bid per square foot for:

ITEM 342-1 - CONCRETE PAVING STONE

SECTION 345 – ADJUSTING FRAMES, COVERS, AND VALVE BOXES

Adjustment of box frames and covers, and manhole covers to grade shall conform to Section 345 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 345.1 – Description

Add the following:

Valve and sewer cleanout box frames and covers, and manhole covers shall be adjusted to meet new grade as shown on the plans prior to finished grading or the placement of asphalt concrete pavement surface. Adjustments for box frames and covers shall conform to MAG Detail 270. Valve box frame and cover adjustments shall be either Type 'A' or Type 'B', as required. Adjustments for manhole frames and covers shall conform to MAG Detail 422, as called for on the plans.

Subsection 345.5 – Payment

Payment for the adjustment of the box frame and cover, and manhole covers to grade shall be made on the basis of the price bid per each for:

ITEM 345-1 – ADJUST BOX FRAME AND COVER

ITEM 345-2 – ADJUST MANHOLE FRAME AND COVER

SECTION 350 – REMOVAL OF EXISTING IMPROVEMENTS

All removals of existing improvements shall conform to Section 350 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 350.1 – Description

Add the following:

The disposal of all waste material removed shall be the responsibility of the Contractor. The disposal site shall be approved by the Engineer. Weigh tickets from all landfill disposal must be provided to the Engineer.

Care shall be taken in removing the dumped riprap and shotcrete temporary lining at the inlet of the existing box culvert section at Station 92+50, to avoid any damage to the box culvert. Any damage shall be repaired by the Contractor as approved by the Engineer, at no cost to the project.

Existing roadway and canal signs and markers shall be removed, and reinstalled by the City of Phoenix and/or the Flood Control District. This work shall be coordinated with Tony Arviso, Construction Traffic Control - City of Phoenix, at 262-6565 in conjunction with the permanent signing and striping work to be done by the City as indicated in Section 401 of these specifications, and with Mr. Fred Fuller - Flood Control District, at 506-4728.

Trees and other landscaping which are directly in conflict with the Contractor's ability to construct the project features may be removed. No large trees will be removed without the written approval of the Engineer. This specifically applies to the large trees located on and along the R&G Park property.

The Contractor will remove and dispose of any excess dirt and asphalt pavement debris stockpiles that may be located along the canal as generated by the recent underground utility relocation work by SRP and USW.

Subsection 350.4 – Payment

Payment for the removal of trees shall only be for those measuring 12 inches or larger in diameter at 1-foot above the original ground surface. Payment for removals shall be full compensation for all labor, material, equipment, disposal costs, including any landfill fees, and shall be made on the basis of the lump sum price bid for the removal of existing improvements including but not limited to fence, curb and gutter, pipe, spillways and lining, pavement, sidewalk, driveways, culverts at the Indian School Road intersection, and large trees.

Payment for removal of existing improvements shall be made on the basis of the lump sum price bid for:

ITEM 350-1 – REMOVE FENCE, HANDRAIL, GUARDRAIL, POSTS AND BARRICADES

ITEM 350-2 – REMOVE CURB AND GUTTER

ITEM 350-3 – REMOVE PIPE

ITEM 350-4 – REMOVE SPILLWAYS AND CHANNEL LINING

ITEM 350-5 – REMOVE ASPHALT PAVEMENT

ITEM 350-6 – REMOVE BOX CULVERTS AT INTERSECTION

ITEM 350-7 – REMOVE DUMPED RIPRAP

ITEM 350-8 – REMOVE SIDEWALK AND DRIVEWAYS

ITEM 350-9 – MISCELLANEOUS REMOVALS

Payment for removal of trees measuring 12-inches in diameter or larger shall be made on the basis of the price bid per each, and shall include full compensation for removal of the trees.

ITEM 350-10 – REMOVE TREES

SECTION 401 – TRAFFIC CONTROL

Traffic control shall conform to Section 401 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 401.1 – Description:

Add the following:

This work shall consist of traffic control, and use of devices and flagmen or pilot cars in accordance with Section 401 of the COP Supplements and the City of Phoenix Traffic Barricade Manual, latest revision.

a. Traffic Control Devices

All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, latest revision.

b. Street Closure Permits

Permission to restrict city streets, sidewalks and alleys (street closure permits) shall be requested as specified in Section III of the City of Phoenix Traffic Barricade Manual.

c. Traffic Manual

Unless otherwise provided for in the following "General Traffic Regulations," all traffic on this project shall be regulated as specified in Section IV of the City of Phoenix Traffic Barricade Manual.

d. Prior Approval

No deviation to the "General Traffic Regulation" will be allowed or implemented unless submitted to the Engineer for review and approval two weeks prior to the proposed work.

e. Permanent signing and striping of new 48th Street Pavement

The Contractor shall contact Tony Arviso, Construction Traffic Control, City of Phoenix, at 262-6565 to coordinate the permanent signing and striping of 48th Street, Arcadia Drive, and the Indian School Road intersection by city forces.

Subsection 401.5 – General Traffic Regulations:

Add the following:

a. Lanes

Construction traffic lanes shall be three inches of D-1/2 Asphalt Concrete Pavement on six inches compacted subgrade (95% min.) and shall be a minimum of eleven feet in width and have a safe operating speed of twenty-five (25) miles per hour. Warning signs shall be used per City of Phoenix Traffic Barricade Manual.

b. Local Access Requirements

The Contractor shall maintain local access to all side streets, access roads, driveways, alleys, and parking lots at all times unless specified to be closed herein or as shown on the traffic control plans, and shall notify residents 72 hours in advance of any restrictions which will affect their access. The Contractor shall restore the access as soon as possible. If the primary access cannot be restored in a timely manner, the Contractor shall provide an alternative which shall be predetermined with the residents prior to imposing any restrictions, and approved by the Engineer.

c. Special Sign Requirements

The Contractor shall provide, erect and maintain advance notifications, and informational and directional access signs that may be required by the Engineer.

d. Flagging of Traffic

No flagging of traffic will be permitted during the peak traffic hours of 6:00 a.m. to 8:30 a.m. and 4:00 p.m. to 7:00 p.m. weekdays. If construction requires, intermittent flagging will be allowed from 8:30 a.m. to 4:00 p.m. to facilitate access for heavy construction equipment.

e. Traffic Control Plan

The Contractor shall submit a traffic control plan which shall implement all traffic control requirements shown on the traffic control plans and included in these Special Provisions for approval, showing the limits of all temporary pavement, placement of all traffic control devices, including all conflicting signs to be covered/removed or relocated, or other features that may conflict with the placement of temporary signage. The plan shall be submitted to the Engineer at the pre-construction meeting for review and approval by the City of Phoenix, Tony Arviso at 262-6565.

Subsection 401.5.1 – Special Traffic Regulations For Construction of the Canal Box Culvert:

a. Detour at Indian School Road (ISR)

Indian School Road will require a three-lane detour. A maximum of 120 calendar days will be permitted for the utilization of the detour, including the construction and removal of the detour. When the detour is in place and opened to traffic, the Contractor shall provide one southbound lane for local traffic on Arcadia Drive and shall provide northbound emergency access from the detour to Arcadia Drive.

The Contractor shall protect in place the Safeguard Security Company building, and shall ensure constant access to the front door of the building located at the southeast corner of ISR and the canal.

Use of the detour will be necessary for such activities as construction of the box culvert, installation of the SRP ductbank, installation of new 12-inch and 16-inch water line, and the reconstruction of the intersection, and restoration of the traffic signals.

The Contractor shall coordinate with the City and with Salt River Project (SRP) for the removal and reinstallation of the traffic signals as required for the installation of the detour and reconstruction of the intersection. The Contractor shall notify the City Traffic Signal Shop at least 60 calendar days prior to any traffic signal work at 262-6733. The Contractor will reinstall the permanent signalization in accordance with the plans prepared by the City and included in the construction plans, and will coordinate with the City of Phoenix and SRP for the activation of the signalization. The removal and reinstallation of existing sidewalk, curb and gutter, and pavement required for the traffic signal installation shall be considered incidental to the signal installation.

The Contractor shall contact and coordinate at least 30 days in advance of detour construction with the R&G Park, contact Steve Holmquist of Phoenix Newspapers at 271-8582, and prior to the removal of the existing fence and other improvements at the property at the southwest corner of Indian School Road and the canal. Salvageable improvements removed for the detour will be placed at a location designated by the R&G Park. The limits of the Temporary Construction Easement shall be fenced and made secure to prevent access onto the grounds of the R&G Park. The Contractor shall coordinate with the R&G Park on the removal of the fence so that the R&G Park may schedule the installation of the park perimeter security system.

The Contractor shall contact the funeral home at least 30 days prior to the installation of the detour. Contact Albert Asta at 840-5600.

The Contractor shall contact and coordinate at least 30 days in advance of detour construction with the Safeguard Security Company, contact John Jennings at 957-2851, and prior to the removal of the company sign and associated light pole at the property on the southeast corner of Indian School Road and the canal. The sign and light pole will be deposited at a location designated by the security company. The Contractor shall "as-build" the existing parking lot paving, curb and gutter at the security company within the limits of the area to be disturbed by the detour construction, and prior to the removal of the pavement. The Contractor shall restore the parking lot after the detour has been removed to the line and grade as it existed and was "as-built" prior to removal.

The detour crossing of the existing Old Cross Cut Canal must be constructed in such a manner that provides a minimum conveyance capacity for the canal of 1,000 cfs through the detour. If the Contractor elects not to use the permanent double 10'x10' concrete box culvert for construction of the detour, then the Contractor will provide design calculations and construction plans for the detour crossing of the canal prepared by a Professional Engineer registered in the State of Arizona. The design calculations and plans will convey the minimum 1,000 cfs flow through the detour crossing. Under all circumstances, whether the double concrete box culvert or some other crossing is utilized for the detour, the crossing must be constructed in such a manner to ensure that the crossing will be protected from the flows in the canal so that the detour crossing is not damaged or washed out. The calculations and plans will be submitted to the Engineer for review at least 30 calendar days prior to beginning the detour construction.

The Contractor shall restore and regrade the areas within the Temporary Construction Easement limits to the same grade as prior to construction. All trash, large rocks, other debris, etc. shall be removed and the easement area left in a neat and clean condition acceptable to the Engineer.

b. Security Company Access

The Contractor shall maintain security company access along the east side of the OCC corridor from the alley south of the security company through Station 115+00 during the duration of the ISR detour. Access to the Security Company from the east will be provided by others for a maximum of six months. If additional access or extended duration of access is required for the Security Company beyond the 120 calendar days being allowed for the detour at ISR, the Contractor shall provide this access at his expense and at no cost to the project.

c. Arcadia Drive

Arcadia Drive shall as a minimum remain open to south bound traffic at all times including during the construction of the two north median islands.

d. Osborn Road

Osborn Road will remain open to vehicular traffic at all times.

e. +8th Street

+8th Street north of Osborn Road to Indian School Road shall remain closed to traffic until completion and acceptance of the project.

f. Other Traffic Control Requirements

The Contractor shall contact the City of Phoenix Fire Department (Chief Joe Bushong at 262-6370) to establish lines of communication and procedures to be followed for providing emergency access at all times during construction, and especially through the detour at Indian School Road, and to Arcadia Drive.

Off duty uniformed officers shall be utilized for traffic control only as required by the City of Phoenix, and only as approved by the Engineer.

Subsection 401.5.2 - Permanent Signalization

This work shall consist of providing permanent signalization at the Indian School Road intersection. All signalization items shall conform to the requirements as stipulated on the plans prepared by the City of Phoenix and included in the construction plans.

Subsection 401.7 – Payment

Payment for the implementation of the traffic control plans, including all mobilization, flag persons, placement, storage, and removal of devices, maintenance incidental to and preparation of the approved traffic control plan, temporary pavement, signing, striping, safety fencing, coordination with the City of Phoenix and other work as required shall be made on the basis of the lump sum price bid for:

ITEM 401-1 – TRAFFIC CONTROL

Payment for off-duty City of Phoenix uniformed officers as mandated by the City of Phoenix will be on an as-used basis as determined by the Engineer. The Contractor shall submit documentation as required by the Engineer to support payment for this item. Payment for off-duty uniformed officers shall be made on the basis of the contract unit price per hour for:

ITEM 401-2 – OFF-DUTY UNIFORMED OFFICER

Payment for the removal and reinstallation of permanent traffic signals at Indian School Road intersection shall be full compensation for all labor, material, equipment, services of the City and SRP, and incidentals and shall be made on the basis of the lump sum price bid for:

ITEM 401-3 - TRAFFIC SIGNALIZATION

Payment for the detour at Indian School Road shall be full compensation for subgrade preparation, asphalt concrete pavement, traffic control devices, striping, signing, flag persons, earthwork, removals and relocations, the detour crossing of the canal with 1,000 cfs conveyance capacity, including any design and preparation of plans for the crossing, removal and clean-up of the detour, "as-built", regrading, pavement replacement, temporary fencing, property owner contact and coordination, and all incidentals required, and shall be made on the basis of the lump sum price bid for:

ITEM 401-4 INDIAN SCHOOL ROAD DETOUR

SECTION 405 – MONUMENTS

Survey monuments shall conform to Section 405 of the MAG Uniform Standard Specifications and COP Supplements.

Subsection 405.1 – Description

Add the following:

The work shall apply to the replacement of monuments located at the Indian School Road intersection.

Subsection 405.5 – Payment

Payment for the monuments shall be made on the basis of the price bid per each for:

ITEM 405-1 – TYPE "A" SURVEY MARKER, MAG DET. 120-1

SECTION 415 - BARRICADES

Barricades shall conform to Section 415 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 415.1 - Description

Add the following:

The work shall include installation of barricades and guardrail as shown in the plans.

Barricades shall conform to City of Phoenix Detail P-1106, Type "B".

Steel guardrails shall conform to ADOT Standard Drawings C-10.04, C-10.18, C-10.22.

Subsection 415.5 - Payment

Payment for barricades and guardrail shall be made on the basis of the price bid per linear foot complete in place for:

ITEM 415-1 - BARRICADE

ITEM 415-2 - GUARDRAIL

SECTION 420 – CHAIN LINK FENCES

The installation of chain link fence shall conform to Section 420 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 420.1 – Description

Add the following:

The work consists of the installation of a 6-foot chain link fence and 5-foot gate at the upstream end of the 10'x10' double box culvert as shown in the plans, and shall conform to MAG Detail 160.

Subsection 420.5 – Payment

Payment for the 6-foot chain link fence shall be full compensation for furnishing all labor, materials, tools, equipment, and doing all work involved as shown on the plans. Payment for the fence and gate shall be made on the basis of the price bid per linear foot for:

ITEM 420-1 – CHAIN LINK FENCE

SECTION 432 – GRAVEL MULCH

Add this section to the MAG Uniform Standard Specifications.

Subsection 432.1 - Description

The work consists of providing all labor, materials and equipment to install gravel mulch on the side slopes above the inlet headwall at approximately Station 117+50. Gravel mulch shall conform to the requirements of Section 701.2.2 of the MAG Uniform Standard Specifications.

Subsection 432.2 - Materials

Gravel mulch shall be graded material and shall be free of debris, fines and soil particles. Gravel mulch will consist of a combination of crushed and rounded material with a minimum of 50 percent by weight crushed material. Crushed rock shall have at least 50 percent of the rock having three fractured faces. A sample must be approved by the engineer prior to delivery to the site.

The percentage wear of the material to be used as gravel mulch will be determined by the test procedure of ASTM Standard C-131, Grading B. The percentage of wear of the material shall not exceed 40 after 500 revolutions.

The aggregates shall be well graded when tested in accordance with ASTM C-136 and ASTM C-117. the percentage composition by weight shall be within the following limits:

SIZE OF OPENING

1-inch
3/4-inch

PERCENTAGE PASSING SIEVE

100
0 - 25

Gravel mulch shall be grey in color. Color shall be approved by the Engineer prior to delivery to the site.

Subsection 432.3 - Subgrade Preparation

The subgrade surfaces shall be the neat lines and grades shown on the drawings.

The sites where equipment can safely operate, (generally slopes 3. 5:1 or flatter), and designated to receive gravel mulch shall be adequately loosened. Discing or cultipacking or both may be necessary, as determined by the Engineer.

The finished surface for both equipment and hand tilled areas shall be left in a roughened condition as approved by the Engineer. This is the normal surface resulting from the tillage operations.

Rocks larger than 3 inches in diameter, trash, weeds, and other debris that will interfere with gravel placement shall be removed and disposed of as determined by the Engineer.

Subgrade preparation shall be discontinued when soil moisture conditions are not suitable for the preparations of a satisfactory subgrade as determined by the Engineer.

Gravel mulch shall not be placed until the subgrade surfaces have been inspected and approved by the Engineer.

Subsection 432.4 - Placement

The gravel mulch shall be placed by equipment on the prepared surfaces. The mulch shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials and native seed mix. The gravel mulch shall be delivered and placed in a manner that will ensure that the in-place mulch layer shall be reasonably homogeneous and the fractions uniformly distributed. Hand placing of gravel cover shall be required to the extent necessary to prevent damage to the permanent works. The thickness of the gravel mulch shall be not less than 2 inches and shall be applied at an average of 150 pounds/square yard.

The gravel mulch will be hand raked and smoothed prior to water spray settling. The application of a uniform spray of water will be made at a rate not exceeding the infiltration rate to minimize run off. The use of pressure pumps and spray bars on all sprinkling equipment used for the application of water will be required. The use of gravity flow spray bars and splash plates will not be permitted.

Subsection 432.5 - Payment

Payment will be considered full compensation for all labor, materials, equipment, and all other items necessary and incidental to the placement of the gravel mulch. No separate payment will be made for water to settle gravel. Payment for gravel mulch shall be made on the basis of the price bid per square yard for:

ITEM 432-1 - GRAVEL MULCH

SECTION 440 - SPRINKLER IRRIGATION SYSTEM INSTALLATION

Installation of the PVC sleeves for future landscape irrigation systems shall conform to the City of Phoenix Supplement to MAG Section 440. Materials shall be in accordance with the City of Phoenix Supplement to MAG Section 757.

Subsection 440.1 - General

Add the following:

The Contractor shall install nine 6-inch PVC Schedule 40 sleeves under the multi-use path, as shown on the irrigation plan sheet L2-2, between Stations 91+50 and 106+00. The sleeves shall extend a minimum of 2 feet beyond the edge of the path and the top of the sleeves shall be placed 12-inches below finished grade.

The Contractor shall install 4-inch PVC Schedule 40 sleeves under the traffic "footballs", the roadway, and a driveway as shown in the plans. The sleeves shall extend a minimum of 5 feet beyond the edge of curb or sidewalk on both sides of the street, and the top of sleeves shall be 2-feet below finished grade.

The ends of all the sleeves shall be located and marked with tracer tape and a rebar or other method to ensure the ability to identify the location of the sleeves for future use.

Subsection 440.8 - Measurement and Payment

Payment for the 4-inch and the 6-inch PVC sleeves shall be made on the basis of the price bid per linear foot, complete in place.

ITEM 440-1 - 4-INCH PVC SLEEVES

ITEM 440-2 - 6-INCH PVC SLEEVES

SECTION 450 - ELECTRICAL DUCTBANK

Add this section to the MAG Uniform Standard Specifications.

Subsection 450.1 - Description

This work shall consist of the installation of the Salt River Project (SRP) under ground electrical ductbank from south of Weldon Avenue through the Indian School Road intersection as shown on the plans prepared by SRP and made a part of these plans and specifications. The ductbank will include conduits for USWest (USW) and for Cox Communications (CATV). Only the conduit ductbank shall be installed as part of this work. All cable, ground mounted equipment, pads, etc. will be installed by others after completion of this project.

Subsection 450.1 - Materials

All ductbank conduit shall be provided by SRP, USW, and by CATV. The Contractor shall contact SRP and USW a minimum of 30 calendar days in advance of the need for the conduit. The Contractor should contact Dee Strubhar at SRP at 236-4849, Frank Fuentes at USW at 831-4231, and John Barnett at CATV at 352-5860, x-156.

Subsection 450.3 - Installation

After backfilling of the box culvert and prior to placement of the new 48th Street roadway, the new ductbank installation will be done from just north of Weldon Avenue near roadway Station 289+75, and two existing ductbank stubouts near roadway Stations 282+75 and 287+75 must be extended to the west beyond the west curb limit. See the SRP plans for details.

All ductbank installation shall be done in accordance with the plans, the notes on the plans, and the "SRP Electric Service Specifications - 1997", a portion of which is included in Appendix "B" of these Special Provisions. A minimum of one week prior to any work on the ductbank, the Contractor shall schedule a pre-construction meeting with SRP, USW, and CATV for the purpose of scheduling and coordinating the

installation of the ductbank. SRP, USW, and CATV will provide on-site inspectors to inspect and provide direction as required for the installation work. The SRP, USW, and CATV inspectors along with the Engineer will determine final acceptance of the ductbank installation.

All conduits and ductbanks will be encased in grout per Appendix "B", with the exception of the conduit crossing of the 48th Street and Indian School Road intersection, from Station 115+50 to 117+00. At this location full strength concrete of at least 2,500 psi shall be used for the encasement.

General backfill requirements will be the use of native material placed and compacted to 95% of maximum density. The exception to this will be between Stations 115+50 to 117+00 where a "half-sack slurry" backfill, in accordance with Appendix "B" will be required. The slurry backfill shall be brought up to the subgrade of the new street improvements.

The cost for the removal and replacement of existing curb and gutter and pavement required for the installation of the ductbank shall be incidental to the installation of the ductbank.

All fill material required to be placed per the grading plans which is in the vicinity of any ground mounted equipment shown on the SRP plans shall be placed and compacted to a minimum of 95 percent of the maximum density.

Subsection 450.4 - Subcontractors List

All ductbank work shall be done by a subcontractor who has been previously approved by SRP. The subcontractor shall be any one of the subcontractor names listed in Appendix "C" of these Special Provisions.

Subsection 450.5 - Measurement

All ductbank work shall be measured in linear feet. For bidding purposes two bid items will be used, one for the north/south main ductbank, and one for all east/west service lateral ductbanks.

Subsection - 450.6 - Payment

Because of the unique way in which the ductbank installation is being funded, payment for the ductbank installation work shall be made to the Contractor directly from SRP. The Contractor shall submit a separate invoice and cost estimate for such invoice for all ductbank related charges to the Engineer. Upon approval, the Engineer will send the invoice directly to SRP, Dee Strubhar at 236-4849, for payment. SRP shall then reimburse the approved invoice charges directly to the Contractor within twenty-one days of receipt of invoice, and SRP will provide the District with a copy of the check or warrant indicating that payment has been made.

Payment for the ductbank installation including all materials, equipment, and labor necessary to install the ductbank, and including all excavation, backfill, placement of conduit, specials, elbows, boxes, etc. and grout and concrete encasement, and other work necessary to complete the installation as shown on the plans and in these Special Provisions shall be made on the basis of the price bid per linear foot for:

ITEM 450-1 - MAIN DUCTBANK INSTALLATION

ITEM 450-2 - SERVICE LATERAL DUCTBANKS INSTALLATION

SECTION 505 – CONCRETE STRUCTURES

Concrete structures shall conform to Section 505 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 505.1 – Description

Add the following:

Concrete box culvert, catch basin inlets, drop inlets, spillways, scuppers and aprons shall conform to Section 505 of the MAG Uniform Standard Specifications. Reinforcing steel shall conform to Section 727 of the MAG Uniform Standard Specifications.

The work shall also include the placement of concrete footers for construction of the box culvert inlet masonry wingwalls.

Concrete shall conform to Section 725 of the MAG Uniform Standard Specifications.

<u>CONCRETE STRUCTURE</u>	<u>CLASS OF CONCRETE</u>
Box Culverts	AA
Aprons for Catch Basins and Drop Inlets	A
Spillways	A
Drop Inlets	A
Catch Basin Inlets	A
Scuppers	B

Due to the groundwater conditions and resulting buoyancy forces, fill material shall be placed over the concrete box culvert to a minimum depth of 4 feet or to the elevations shown on the plans, and in accordance with Subsection 107.10. This shall be done when the concrete has developed a strength of not less than 3,200 psi in compression as specified in Section 725 of the MAG Uniform Standard Specifications.

Fiber reinforcing shall be used in conjunction with the reinforcing steel and welded wire fabric in all spillways and aprons for inlets. Fiber reinforcing shall consist of 100 percent virgin polypropylene, fibrillated fibers containing no reprocessed olefin materials and specifically manufactured to an optimum gradation for use as concrete secondary reinforcement. Volume per cubic yard shall equal a minimum of 0.1% (1.5 pounds). Fibers are for the control of cracking due to drying shrinkage and thermal expansion/contraction, reduction of permeability, increased impact capacity, shatter resistance, abrasion resistance and added toughness.

Fibrous reinforcement shall have the following physical characteristics:

- | | |
|---------------------|--|
| 1. Specific Gravity | 0.91 |
| 2. Tensile Strength | 60 ksi (min.) |
| 3. Fiber Length | graded 1/2, 3/4, 1-1/2, and 2-inch lengths |

Fibrous reinforcement shall be installed to the manufacturers specifications.

A "light brown" color admixture conforming to Davis Color "Flag Stone Brown #64" as manufactured by Davis Colors, or approved equal, shall be used for all exposed concrete elements as follows. The color shall be added at the rate of 2 pounds per 94 pound sack of cement.

1. Spillways
2. Aprons for drop inlets and catch basins
3. Exposed portions at grade of drop inlets and catch basins
4. Scuppers in multi-use path

Features not requiring concrete color are the large scupper at north side of Indian School Road, and the exposed inlet end of the box culvert at Station 117+55.

The concrete colors shall conform to hue, value, and chroma of the colors named above. A test panel shall be made of each concrete color and shall be approved by the Engineer prior to use. The test panels shall be 5' X 5' in size and shall remain on the project site until the completion of the project. The cost of the coloring and test panels is incidental to the cost of the concrete.

Subsection 505.3.1 - Removal of Forms

Add the following:

The false work supporting the deck of the box culvert may be removed only after the last concrete placement in the deck has achieved a minimum strength of 3,200 psi.

Subsection 505.6 - Placing Concrete

Add the following:

Precast units for the 10'x10' and the 12'x10' box culvert sections may be used as an alternative to the cast-in-place culvert sections of a similar size.

At the pre-construction meeting, the Contractor shall provide the design, plans, and specifications for the precast culvert units, meeting the loading and water-tight requirements as shown in the plans. The precast units shall be designed to accommodate all penetrations, blockouts, and connections for all storm drains, pipes, drop inlets, equalizer openings, and manholes as required and shown in the plans. If separate pre-cast units are utilized to form the double box culvert units, the joints between the box culvert units at all equalizer openings must be water tight. The design, plans, and specifications shall be prepared and sealed by a Professional Engineer registered in the State of Arizona. The plans and specifications shall be submitted to the Engineer for review and approval prior to the beginning of fabrication of the precast units.

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 by the Engineer.

Subsection 505.8 - Curing

Add the following:

All exposed surfaces of colored concrete shall be cured using a wet burlap method. The colored concrete shall be kept continuously wet for at least seven days after being placed. This is necessary because of the adverse affects on the concrete color and the Graffiti Protector #J-44.

Subsection 505.9 – Finishing Concrete

Add the following:

A heavy broom finish will be applied to all spillways, to the aprons for the drop and catch basin inlets, and to the top of the scuppers.

A clear protective water based coating shall be applied to ALL exposed concrete surface areas including but not limited to aprons, spillways, box culvert walls and slabs, at grade top of inlet and catch basin walls, etc. The coating shall be Graffiti Protector #J-44, produced by Dayton Superior, or approved equal. The coating shall be clear and contain no coloring. The cost of the coating is incidental to the cost of the concrete.

A minimum Class I finish shall be achieved on the inside concrete surface of the box culverts. Materials used for forms shall be free of defects that would impair the texture of the finished surface. Forms shall be inspected prior to placing concrete to ensure that they are free from dirt, debris and foreign matter. The Contractor shall ensure that forms are set true to line with no deviations. All forms shall be cleaned prior to placing concrete. All surface defects shall be repaired to produce a Class I finish. Any protrusions such as joint lines shall be ground down to produce a smooth, flat texture. The surfaces of the inside of the box culvert shall be straight and smooth and shall have a maximum deviation of not greater than one quarter of one inch (0.25") in ten feet (10'). The invert of the box culvert shall have a smooth troweled finish.

Subsection 505.10 – Payment

Payment for the box culverts, and for the transition between the box culverts shall be made on the basis of the price bid per linear foot, and shall include full compensation for all labor, material, equipment, weep holes, structure excavation and backfill, and appurtenances necessary for construction complete in place.

ITEM 505-1 – DOUBLE 12' X 10' CONCRETE BOX CULVERT

ITEM 505-2 – DOUBLE 10' x 10' CONCRETE BOX CULVERT

**ITEM 505-3 – TRANSITION FROM DOUBLE 12' X 10' TO DOUBLE 10' X 10'
CONCRETE BOX CULVERT**

Payment for the drop and catch basin inlet aprons shall include full compensation for all labor, material, color admixture, equipment, coatings, and appurtenances necessary for construction in place including all concrete, welded wire fabric, and fiber reinforcing and shall be made on the basis of the price bid per square foot for:

ITEM 505-4 – CONCRETE APRON

Payment for spillways shall be made on the basis of the price bid per square yard, and shall include full compensation for all labor, material, equipment, coatings, and appurtenances necessary for construction in place including all concrete, reinforcing steel, fiber reinforcing, and color admixture.

ITEM 505-5 – CONCRETE SPILLWAYS

Payment for drop inlets, Detail P-1569 Type "M", and Detail P-1570 Type "N" catch basins, and for concrete scuppers in the multi-use path and at Indian School Road shall be made on the basis of the price bid per each, and shall include full compensation for all labor, materials, equipment, and appurtenances necessary for construction in place including all concrete and reinforcing steel, structure excavation and backfill, grates, color admixture, and coatings.

ITEM 505-6 – SINGLE GRATE DROP INLETS

- ITEM 505-7 – DOUBLE GRATE DROP INLETS
- ITEM 505-8 – DET. P-1570 TYPE “N” SINGLE CATCH BASINS
- ITEM 505-9 – DET. P-1570 TYPE “N” 6-GRATE CATCH BASINS
- ITEM 505-10 – CONCRETE SCUPPERS, MAG DET. 206.1 AND 206.2
- ITEM 505-11 - CONCRETE SCUPPER AT INDIAN SCHOOL ROAD

Payment for the concrete footers for the box culvert inlet masonry wingwalls shall be made on the basis of the price by per cubic yard and shall include full compensation for all concrete, rebar, and other materials, labor, and equipment necessary for construction and including all excavation and backfill.

ITEM 505-12 - BLOCKWALL FOOTERS

SECTION 510 - CONCRETE BLOCK MASONRY

The installation of concrete block masonry shall conform to Section 510 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 510.1 - Description

Add the following:

The work shall include the installation of the concrete block masonry wingwalls and headwall as shown in the plans at the inlet end of the double concrete box culverts.

Subsection 510.2 - Construction

Reinforcing, bond beams, and solid grouting of all cells shall be as shown in the plans.

Concrete masonry units shall conform to Section 775 of the MAG Uniform Standard Specifications and as shown in the plans.

Masonry mortar and grout shall conform to Section 776 of the MAG Uniform Standard Specifications. Masonry mortar shall be Type “M” and the grout shall be course grout as listed in Section 776.

Reinforcing steel shall be Grade 60.

Subsection 510.6 - Payment

Payment for the concrete block masonry shall be made on the basis of the price bid per square foot complete in place and including all block, reinforcing steel, grout and other materials, labor, equipment required to construct the masonry wingwalls and headwall as shown in the plans.

ITEM 510-1 - CONCRETE BLOCK MASONRY

SECTION 515 – STEEL STRUCTURES

The supplying and installing of removable bollards and the access barrier trash racks, and shall conform to Section 515 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 515.1 – Description

Add the following:

Removable bollards shall be obtained from the Maricopa County Flood Control District. The Contractor shall contact Mr. Fred Fuller of the Flood Control District at 506-4728 to order the number of removable bollards needed. This contact shall be made a minimum of three weeks prior to the date the bollards are

needed. The concrete for the base of the removable bollards shall be Class C. The Flood Control District will supply all of the items for the removable bollards except for the concrete base, the six-inch diameter steel pipe and the rebar.

The trash racks shall conform to ADOT Detail No. C-13.75 and shall be galvanized in accordance with MAG Section 771.

Subsection 515.7 - Payment

Payment for the removable bollards shall be made on the basis of the price bid per each, complete in place for:

ITEM 515-1 – REMOVABLE BOLLARDS

Payment for the access barrier trash racks shall be made on the basis of the lump sum price bid, complete in place, including galvanizing, for:

ITEM 515-2 – ACCESS BARRIER TRASH RACKS

SECTION 520 - STEEL HANDRAILS

Steel handrails shall conform to Section 520 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 520.1 - Description

Add the following:

The work shall consist of furnishing and installing steel handrail along the headwall at the box culvert inlet north of Indian School Road.

The handrail shall be galvanized in accordance with MAG Section 771.

Subsection 520.5 - Payment

Payment for handrail complete in place including galvanizing shall be made on the basis of the price bid per linear foot for:

ITEM 520-1 - HANDRAIL

SECTION 525 – PNEUMATICALLY PLACED CONCRETE

Pneumatically placed concrete shall conform to Section 525 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 525.1 – Description

Add the following:

Pneumatically placed concrete shall be placed as a lining transition from the existing canal to the inlet end of the box culvert as shown on the plans.

Subsection 525.4 – Reinforcing Steel

Add the following:

A single mat of reinforcing steel, #4 @ 12" each way, shall conform to Section 727 of the MAG Uniform Standard Specifications.

Subsection 525.8 - Joints

An expansion joint shall be installed between the shotcrete invert slope protection and the inside face of the masonry wingwalls and between the shotcrete slope protection and the vertical face of the end of the double box culvert slab.

The sponge rubber expansion material shall conform to Federal Specification HH-F-341F, Type 2, Class A sponge rubber, provided that the load required to compress the test specimen to 50 percent of its thickness before test shall be not less than 50 pounds per square inch and not greater than 150 pounds per square inch. The sponge rubber material shall be stored and shall be applied in accordance with manufacturers requirements.

The elastomeric (mastic) sealant along the top of the expansion material shall be Sikaflex 1-A as manufactured by Sika Corporation, Santa Fe Springs, CA, or approved equal.

Subsection 525.12 – Payment

Measurement and payment for pneumatically placed concrete shall be made on the basis of the price bid per square yard of final exposed surface area, at the thickness indicated in the plans, complete in place including the expansion joints and sealant for:

ITEM 525-1 – CHANNEL BOTTOM AND SLOPE PROTECTION

SECTION 609 – WELL ABANDONMENT

Subsection 609.1 – Description

The work in this section consists of the closure of three existing piezometer wells located along the canal bank south of Indian School Road. All work shall be done in accordance with ARS R12-15-816, and as a minimum shall consist of the following:

1. Well abandonment shall be performed by a licensed well drilling Contractor.
2. The Contractor will not commence abandoning well(s) until the appropriate abandonment card is received from the Arizona Department of Water Resources (ADWR) via the District. This card will be maintained at the well site.
3. All well casings will be removed prior to abandonment of the wells.
4. The well shall be filled with cement grout or clean sand with bentonite of sufficient volume, density, and viscosity to prevent the well from being a channel allowing the vertical movement of water or fluids.
5. Within 30 days after a well is abandoned the Contractor shall file with the ADWR a "Well Abandonment Completion Report" on the form prescribed and furnished by the ADWR which shall include the date the abandonment of the well was completed and such other information as the ADWR may require.

The Contractor shall coordinate the abandonment of the wells with the Engineer. the Contractor shall provide 45 days advance notice to the Engineer of when the well will be abandoned. The District will contact the ADWR to initiate the well abandonment process and the issuance of the well abandonment card, which will then be sent directly to the Contractor.

Subsection 609.2 – Payment

Payment for the closure and abandonment of the piezometer wells shall be made on the basis of the price bid per each, and shall include full compensation for all labor, materials, equipment, and appurtenances necessary to abandon the wells, including all necessary paperwork required by the ADWR.

ITEM 609-1 – WELL CLOSURE

SECTION 610 – WATER LINE CONSTRUCTION

Water line construction shall conform to Section 610 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 610.1 – Description

Add the following:

The work under this section shall consist of furnishing and installing a 12-inch and a 16-inch ductile iron pipe (DIP) water line within the limits of the intersection reconstruction at Indian School Road as shown in the plans, and making the necessary modifications and connections to existing water lines. The work shall also include installation of all fittings as shown on the plans.

The work shall also consist of the relocation of an existing fire hydrant.

All materials necessary for the pipe installation and testing shall be furnished by the Contractor.

Subsection 610.3 – Materials

Add the following:

Ductile iron pipe and fittings with restrained joints shall be used for the 12-inch and 16-inch water lines. All pipe shall have a minimum wall thickness of Class 50. All 12-inch pipe shall be of minimum pressure class 350. All 16-inch pipe shall be of minimum pressure class 250. The ductile iron pipe and associated joint restraint methods shall conform to Section 750 "IRON WATER PIPE AND FITTINGS" of the MAG Uniform Standard Specifications and the COP Supplements.

Subsection 610.4 – Construction Methods

Add the following:

All existing water lines shall be protected in place during all construction activities, especially during excavation for and construction of the box culverts and catch basin inlet structures. The Contractor shall be responsible for repairing any damage to the existing pipe resulting from the Contractor's operations to the satisfaction of the Engineer. Any pipe deemed damaged beyond repair by the Engineer shall be replaced with restrained joint ductile iron pipe. All repair or replacement shall be at the Contractor's expense with no additional payment.

Trench excavation and backfill shall conform to the requirements of Section 601 of the MAG Uniform Standard Specifications. Bedding and backfill materials placed within the pipe zone shall be either ABC

or Type B Select Material as described in Section 702 of the MAG Uniform Standard Specifications and as detailed on the plans.

The Contractor shall field verify the tie-in locations of existing water lines and all existing utility crossings.

Backfill shall be Type I and materials above the pipe zone shall conform to Subsection 601.4.3 of the MAG Uniform Standard Specifications. One sack ABC slurry per Section 728 of the MAG Uniform Standard Specifications can be used as an alternate material for the backfill area above and in the pipe zone.

The existing east/west 12-inch water line at Indian School Road may be shut down, removed, and replaced as required for the box culvert construction. The existing north/south 12-inch water line at Indian School Road may NOT be shut down for the tapping sleeve and valve connection of the new 12-inch water line. Multiple shutdowns of the water lines will not be permitted. The Contractor shall provide seven days notice to the City of Phoenix prior to shut down of any active water service lines.

An existing 2-inch underground gas line service to the R&G Park must be relocated for the installation of the new 16-inch water line. The 2-inch gas line shall be relocated by Southwest Gas Company (SWG) to accommodate this installation. The Contractor must contact and coordinate with SWG at least 60 calendar days in advance of the need to have the gas line relocated. The Contractor shall incorporate this relocation into the construction schedule for the installation of the 16-inch water line. The cost of the gas line relocation will be paid for by others.

Subsection 610.5 - Polyethylene Corrosion Protection

All pipe, valves and fittings shall be protected from corrosion by encasement in a polyethylene protective wrapping as specified in MAG Section 610.5.

Subsection 610.14 – Testing

Add the following:

The new section of water lines shall be subject to hydrostatic testing, disinfection and bacteriological testing prior to the shutdown and connection in accordance with Section 610.14 "TESTING," of the COP Supplements and Section 611 "DISINFECTING WATER MAINS," of the MAG Uniform Standard Specifications and COP Supplements. Once the connections are completed, line pressure shall be restored and the connection visually inspected for leaks before concrete encasement and any backfilling of the trench.

Testing methods and procedures shall be included with the material drawings submittals for approval from the Engineer as detailed in Section 758 of the MAG Uniform Standard Specifications and the COP Supplements.

Subsection 610.18 – Payment

Payment for the installation of the new 12-inch and 16-inch water lines shall be made on the basis of the price bid per linear foot, and shall include full compensation for furnishing all labor and materials including the pipe and fittings, specials, adapters, and connection to existing pipe, complete in place, as called for on the plans and/or on the standard details, and shall include all costs of excavation, protecting existing utilities, subdrainage, bedding, backfilling, compaction, testing, disinfecting, and all work not specifically covered in other pay items.

ITEM 610-1 – WATER LINE (12-INCH)

ITEM 610-2 – WATER LINE (16-INCH)

Payment for relocation of existing fire hydrant shall be full compensation for all DIP material including fittings, valves, and all other items necessary to relocate the fire hydrant complete in place and shall be made on the basis of the price bid per each for:

ITEM 610-3 - FIRE HYDRANT RELOCATION

SECTION 618 – STORM DRAIN CONSTRUCTION

Storm drain construction shall conform to Section 618 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 618.1 – Description

Add the following:

Concrete pipe for storm drain and subdrain construction shall be rubber gasket reinforced concrete pipe (RGRCP) and shall conform to Section 725 and 765 of the MAG Uniform Standard Specifications.

All concrete pipe shall be a minimum Class III as specified in ASTM Designation C-76-88.

Trench excavation, bedding and backfill shall conform to Section 601 of the MAG Uniform Standard Specifications. One sack ABC slurry per Section 728 may be used as an alternative material for bedding and backfill as required.

Subsection 618.6 – Payment

Payment for the installation of storm drain and subdrain piping shall be made on the basis of the price bid per linear foot, and shall include all trenching, excavation, bedding, backfill, pavement replacement, concrete pipe collars, connections, labor, material, and incidentals otherwise required.

ITEM 618-1 – 12" RGRCP

ITEM 618-2 – 15" RGRCP

ITEM 618-3 – 18" RGRCP

ITEM 618-4 – 24" RGRCP

ITEM 618-5 – 33" RGRCP

ITEM 618-6 – 48" RGRCP

ITEM 618-7 – 60" RGRCP

Payment for MAG Det. 403-1 and 403-2 Type "B" and Type "C" pipe supports will be made on the basis of the price bid per each for:

ITEM 618-8 – TYPE "C" PIPE SUPPORT MAG DET. 403-1,2

ITEM 618-9 – PIPE PLUG MAG DET. 427

SECTION 625 – MANHOLE CONSTRUCTION

Manhole construction shall conform to Section 625 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 625.1 – Description

Add the following:

The work shall consist of the construction of the box culvert access manholes, irrigation manholes, and storm drain manholes in accordance with the details as shown on the plans.

Concrete for the box culvert access manholes shall be Class AA.

The irrigation and storm drain manholes shall be in accordance with MAG DET 520 and 522.

For the box culvert access manholes and the storm drain manholes, all steel components such as ladders, manhole covers, etc. shall conform to MAG and to the details as shown on the plans. The access ladders shall be fabricated from carbon steel conforming to ASTM A-36 and shall be galvanized in accordance with MAG Section 771.

Manholes for the SRP irrigation subdrains shall have a standard 24" cast iron SRP frame and cover , stock code number 004-0425, centered in the top of the manhole. The SRP irrigation manhole locations are as noted in the plans. The Contractor shall obtain (purchase) the frame and cover from the SRP Investment Recovery Department at 236-2781.

Subsection 625.5 – Payment

Payment for the access manholes, and storm drain and irrigation manholes shall be made on the basis of the price bid per each, and shall include full compensation for all labor, materials, equipment, and appurtenances necessary for construction in place including all concrete and reinforcing steel, pre-cast sections, and all other steel and other embedments, ladders, and manhole covers, including SRP frames and covers.

ITEM 625-1 – ACCESS MANHOLES

ITEM 625-2 – STORM DRAIN & IRRIGATION MANHOLES

SECTION 630 - TAPPING SLEEVES, VALVES AND VALVE BOXES

Tapping sleeves, valves, and valve boxes shall conform to Section 630 of the MAG Uniform Standard Specifications and COP Supplements except as modified herein.

Subsection 630.1 Description

The work shall consist of furnishing and installing 12-inch tapping sleeves, valves and valve boxes at the locations shown on the plans.

All materials necessary for installation and testing shall be furnished by the Contractor.

Subsection 630.9 - Payment

Payment for installation of tapping sleeves, valves and valve boxes shall be made on the basis of the price bid per each and shall be full compensation for all labor, material, and equipment complete in place for:

ITEM 630-1 - 12-INCH TAPPING SLEEVE AND VALVE

ITEM 630-2 - 12-INCH VALVE

APPENDIX
“A”

SOIL BORINGS LOG

OLD CROSS CUT CANAL

Indian School Road to McDowell Road
Phoenix, Arizona



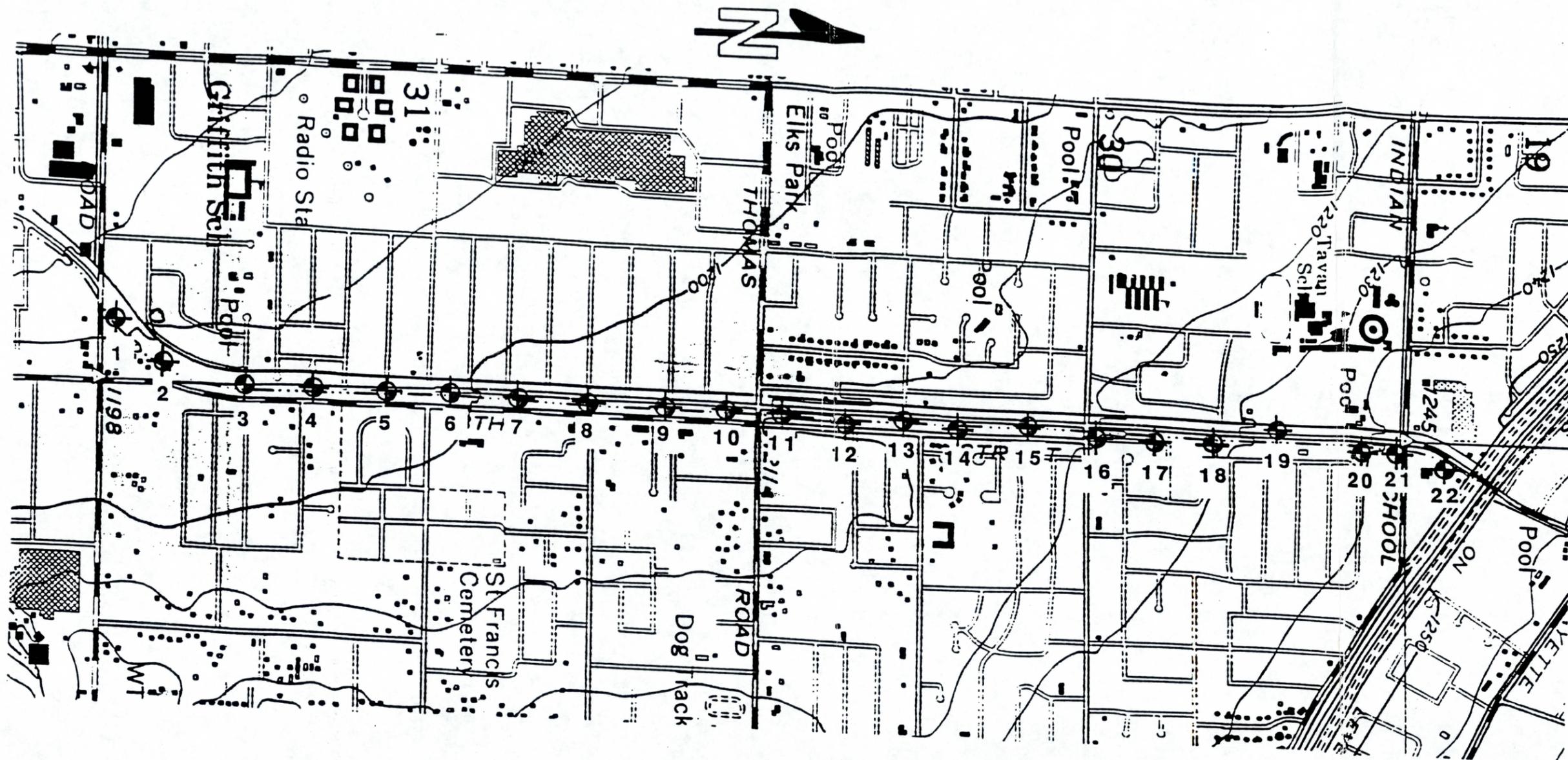
Prepared for

Greiner, Incorporated
7310 North 16th Street, Suite 160
Phoenix, Arizona

FLOOD CONTROL DISTRICT RECEIVED	
FEB 13 '91	
CH ENG	P & PI
DEP	HYDRO
COMM	LEAD
FINANCE	FILE
C & O	
ENGR	
REMARKS	



THOMAS-HARTIG & ASSOCIATES, INC.
GEOTECHNICAL, MATERIALS TESTING, AND ENVIRONMENTAL CONSULTANTS



LEGEND:

⊕ Test Boring Location

Elevations approximated from Plan and Profile
provided by Greiner Engineering

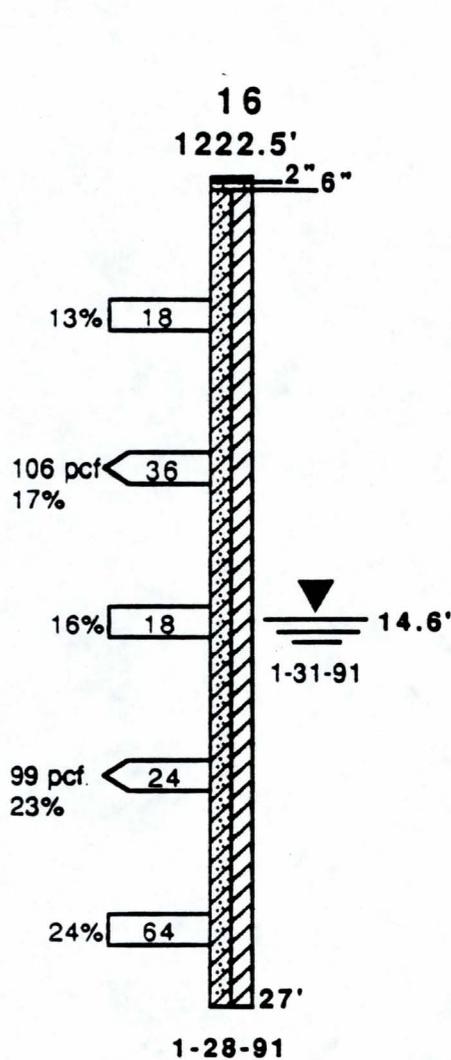
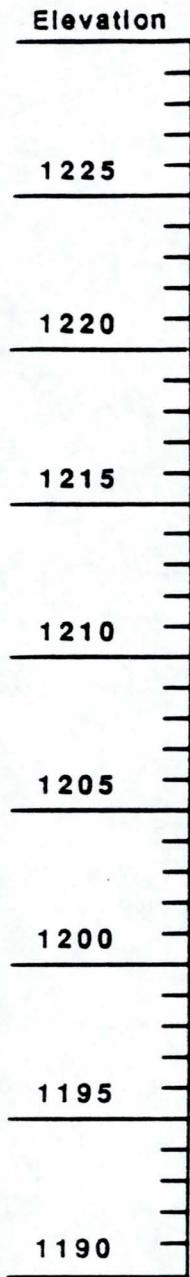
NOTE: Test borings 3, 8, 13, 16, & 21 completed as
piezometer wells

Site Plan

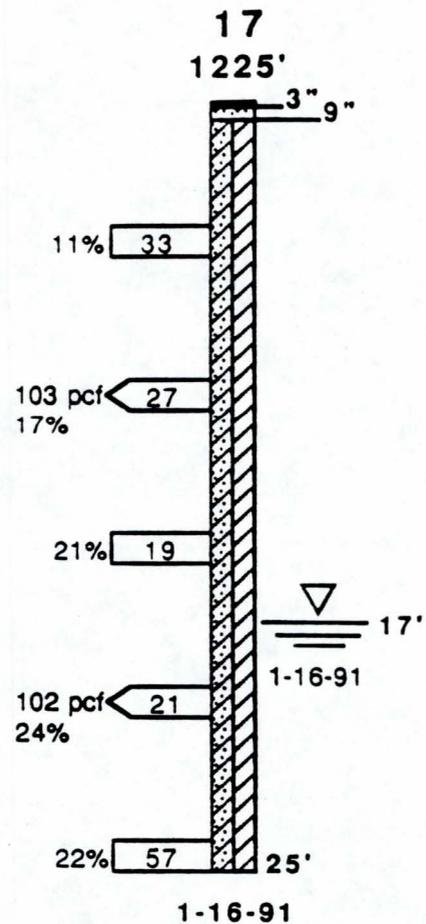
Project No. 90-0863

THOMAS-HARTIG & ASSOCIATES, INC.

GRAPHICAL BORING LOGS



NOTE: Completed as a piezometer. See Schematic Well Construction Plan.



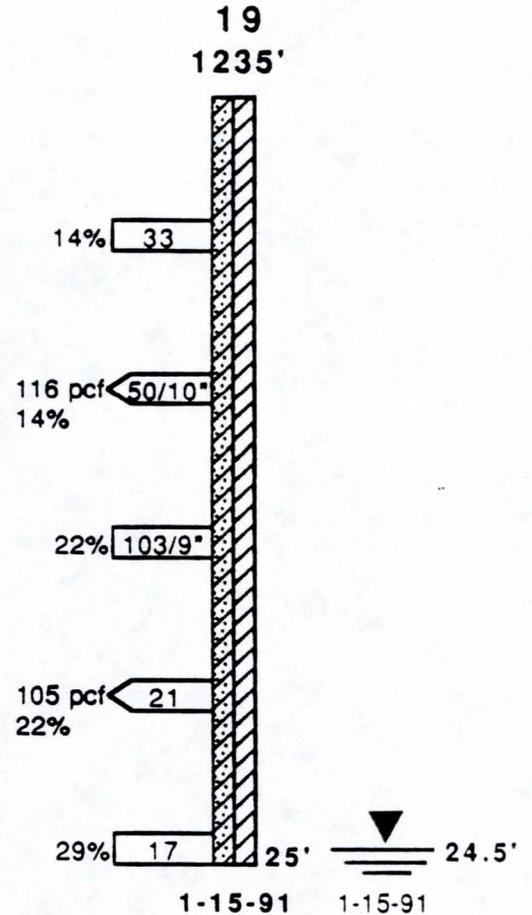
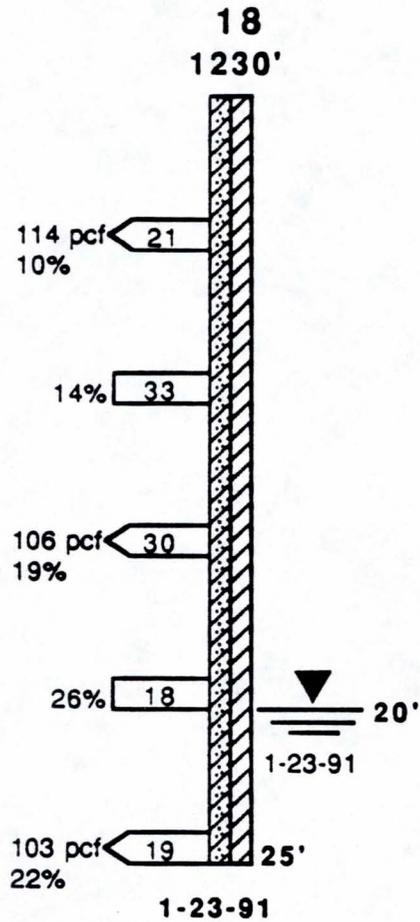
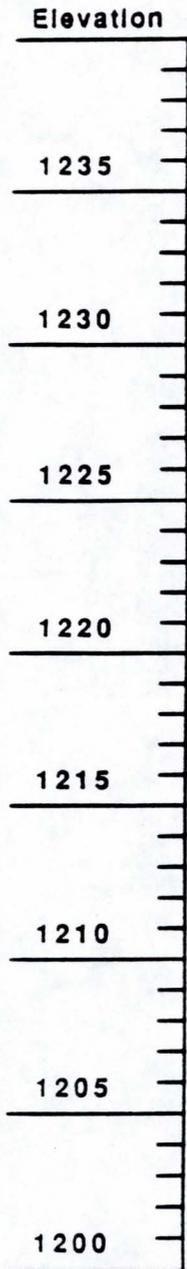
Free groundwater was encountered in the test borings during drilling as noted above.

All borings drilled with 7" diameter hollow stem auger unless otherwise noted.

NOTE: The data presented on the boring logs represents subsurface conditions only at the specific locations and at the time designated. This data may not represent conditions at other locations and/or times. Contacts between soil strata are approximate and changes between soil types may be gradual rather than abrupt. This boring data was compiled primarily for design purposes and should not be construed as part of the plans governing construction or defining construction techniques. Bidders are fully responsible for interpretations or conclusions they draw from the boring log.

Project No. 90-0863
Thomas-Hartig & Associates

GRAPHICAL BORING LOGS



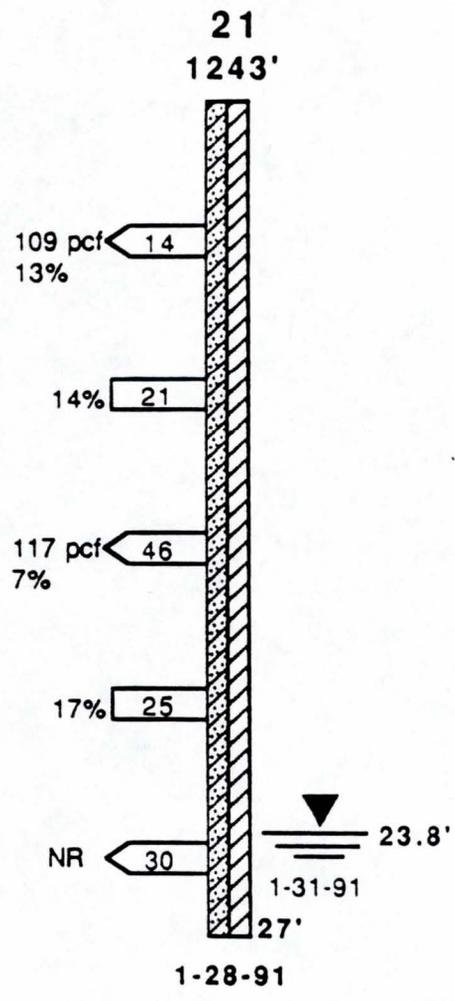
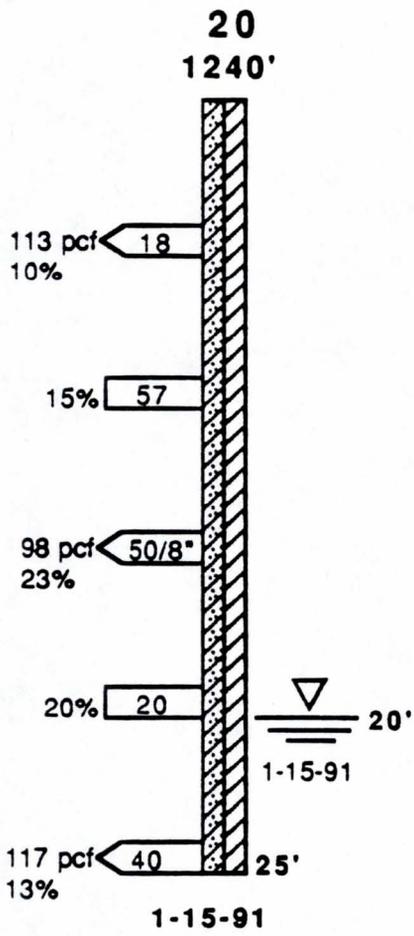
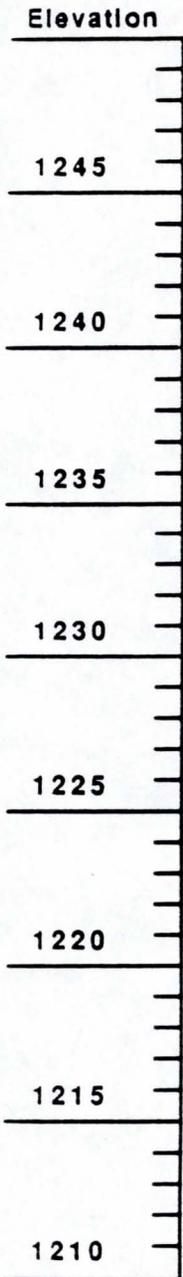
Free groundwater was encountered in the test borings during drilling as noted above.

All borings drilled with 7" diameter hollow stem auger unless otherwise noted.

NOTE: The data presented on the boring logs represents subsurface conditions only at the specific locations and at the time designated. This data may not represent conditions at other locations and/or times. Contacts between soil strata are approximate and changes between soil types may be gradual rather than abrupt. This boring data was compiled primarily for design purposes and should not be construed as part of the plans governing construction or defining construction techniques. Bidders are fully responsible for interpretations or conclusions they draw from the boring log.

Project No. 90-0863
Thomas-Hartig & Associates

GRAPHICAL BORING LOGS



NR = No Recovery
 NOTE: Completed as a piezometer. See Schematic Well Construction Plan.

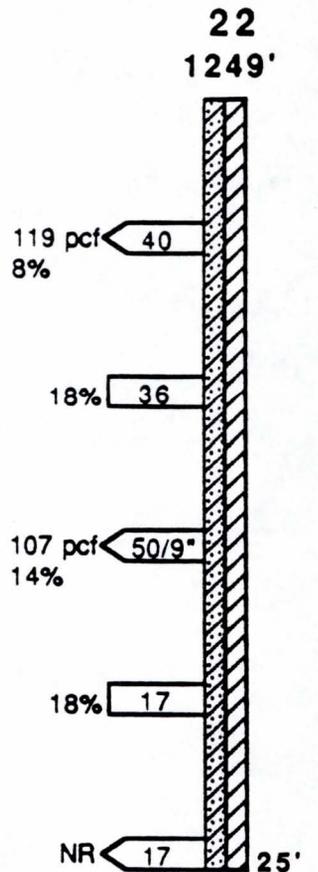
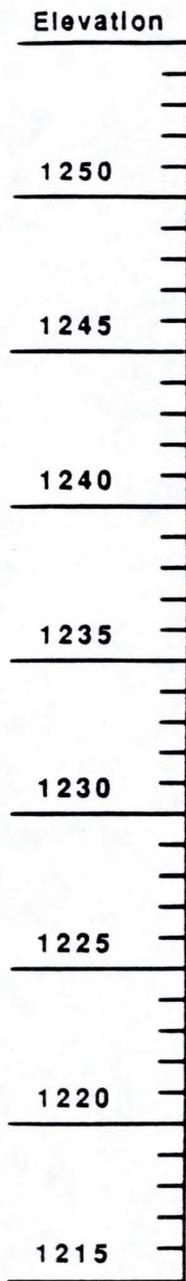
Free groundwater was encountered in the test borings during drilling as noted above.

All borings drilled with 7" diameter hollow stem auger unless otherwise noted.

NOTE: The data presented on the boring logs represents subsurface conditions only at the specific locations and at the time designated. This data may not represent conditions at other locations and/or times. Contacts between soil strata are approximate and changes between soil types may be gradual rather than abrupt. This boring data was compiled primarily for design purposes and should not be construed as part of the plans governing construction or defining construction techniques. Bidders are fully responsible for interpretations or conclusions they draw from the boring log.

Project No. 90-0863
 Thomas-Hartig & Associates

GRAPHICAL BORING LOGS



1-15-91

NR = No Recovery

No free groundwater was encountered in the test borings during drilling unless otherwise noted.

All borings drilled with 7" diameter hollow stem auger unless otherwise noted.

NOTE: The data presented on the boring logs represents subsurface conditions only at the specific locations and at the time designated. This data may not represent conditions at other locations and/or times. Contacts between soil strata are approximate and changes between soil types may be gradual rather than abrupt. This boring data was compiled primarily for design purposes and should not be construed as part of the plans governing construction or defining construction techniques. Bidders are fully responsible for interpretations or conclusions they draw from the boring log.

**Project No. 90-0863
Thomas-Hartig & Associates**

REPORT ON LABORATORY TESTS

SAMPLE:

Date: 1/28/91

Source: Noted Below

Type: Bulk Samples

Material: Subsurface Soil

Sampled By: TH/Thompson

TESTED: Gradation and Plasticity Index

RESULTS

Sample	LL	PI	Sieve Size -					Accumulative % Passing					Class.	
			200	100	50	30	16	8	4	3/4"	1"	2"		3"
1; 0' - 8'	38	14	36	44	49	53	59	68	79	95	95	100		SC
2; 4' - 9'	46	21	49	57	62	66	71	80	90	100				SC/CL
3; 14' - 15'	56	21	42	52	58	64	71	81	90	100				SM
4; 10' - 17'	59	31	38	45	49	53	58	68	80	100				SC
5; 17' - 24'	58	32	33	40	45	49	61	64	78	100				SC
6; 16' - 24'	54	29	47	53	57	61	66	75	87	100				SC/CH
7; 8' - 16'	61	33	48	55	60	64	70	78	90	100				SC/CH
8; 17' - 24'	56	29	48	56	62	68	75	86	95	100				SC/CH
9; 0' - 8'	39	19	33	41	46	51	59	73	87	100				SC
10; 7' - 14'	61	35	38	44	48	53	59	69	84	100				SC
11; 7' - 17'	51	28	28	33	37	42	49	63	82	100				SC
12; 8' - 14'	67	40	49	56	61	65	71	81	92	100				SC/CH
13; 9' - 16'	54	28	52	60	66	71	78	87	96	100				CH/SC
14; 0' - 9'	39	20	34	41	46	51	59	71	87	100				SC
15; 18' - 24'	56	31	58	67	72	76	80	87	95	100				CH
16; 0' - 8'	33	12	38	47	51	55	61	71	84	97	100			SC
17; 7' - 14'	58	28	34	39	44	49	59	75	92	100				SC

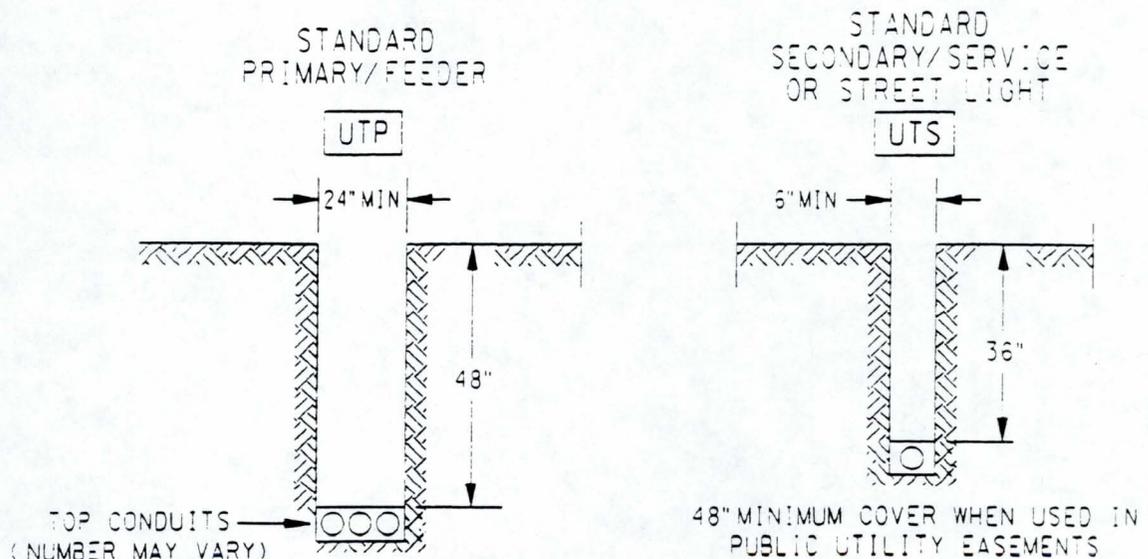
*Unified Soil Classification

Project No. 90-0863
Thomas-Hartig & Associates, Inc.

**APPENDIX
“B”**

SALT RIVER PROJECT DUCTBANK INSTALLATION SPECIFICATIONS

EXCAVATION CODES



UTPX This code is used in the grid to adjust man hours and material when digging a non-standard primary/feeder trench.

NOTES

1. Trench requirements for a specific job may require exact trench depth. This information shall be specified on the drawing and shall be noted that variation in trench depth will not be permitted.
2. Trench depths are to be measured from final grade stakes. All minimum cover requirements specified on a job drawing shall be followed.
3. The bottom of the trench should be undisturbed, tamped or relatively smooth earth, free of sharp rocks. Where the excavation is in rock, the bottom of the trench shall have a protective layer of clean, level, tamped backfill or sand.
4. Excavation within utility easements shall be compacted to 85% density.
5. These trench codes provide for excavation only and do not provide for trench backfill.
6. When a UTPX trench code is used, the trench location will be identified on the job order sketch with the required width and depth dimensions given.
7. The minimum cover required for non-concrete encased primary/feeder conductors/conduits is 48"; secondary conductors/conduits is 36" (48" in P.U.E.).
8. The total trench footage length will be shown in the grid as standard trench, either UTP for primary or UTS for secondary, street light or service.
9. Non-standard trenches shall have 2 compatible unit codes in the grid; UTP plus UTPX (to adjust time for digging).

ESS212.DOC	Dwg. No. 8509E91	Electric Service Specifications PROPRIETARY MATERIAL
DATE: 4/15/86	TRENCHING EXCAVATION CODES	
REV. NO.: 3		
REV. DATE: 1/15/94		
APPROVAL: MLD		
212	Page 1 of 2	

EXCAVATION BACKFILL CODES

1. UTNBP = Complete native backfill for a UTP trench.
2. UTNBS = Complete native backfill for a UTS trench.
3. UTNBPX = Native backfill, use for adding or deleting man-hours and material for non-standard trench. See UT-X chart.
4. UTABP = Complete ABC (stk. code 00-0112) backfill of a UTP trench.
5. UTABS = Complete ABC (stk. code 00-0112) backfill of a UTS trench.
6. UTABPX = ABC (stk. code 00-0112) backfill, used for adding or deleting man-hours and material for non-standard size trench. See UT-X chart.
7. UTLBP = Complete lean mix (LMB 1/2 sack, stk. code 00-0104) backfill for a UTP trench.
8. UTLBS = Complete lean mix (LMB 1/2 sack, stk. code 00-0104) backfill for a UTS trench.
9. UTLBPX = Lean mix (LMB 1/2 sack, stk. code 00-0104) backfill, used for adding or deleting man-hours and material for non-standard size trench. See UT-X chart.
10. UTSBP = Complete slurry (LMB 1-1/2 sacks, stk. code 00-0106) backfill of a UTP trench.
11. UTSBS = Complete slurry (LMB 1-1/2 sacks, stk. code 00-0106) backfill of a UTS trench.
12. UTSBPX = Slurry (LMB 1-1/2 sacks, stk. code 00-0016), used for adding or deleting man-hours and material for non-standard size trench. See UT-X chart.

NOTES

1. The UT-X chart is to be used when calculating man-hour and material adjustments for non-standard primary trench backfill. It is to be used when:
 - A. The trench is narrower, shallower, wider and/or deeper by 6" or more than the standard UTP trench.
 - B. The backfill will be of two or more different types (i.e., ABC and native will be used to fill the trench).
 - C. There is a concrete encased conduit bank partially backfilling the trench and adjustment needs to be made to the remaining amount of backfill.
 Exception: Trenches requiring sloping assume a duct bank will be installed. Time and material have been adjusted already.
 - D. Anytime it is known that approximately one (1) foot or more of the trench bottom will be completely filled with something other than the native fill, excess native fill cannot be placed back into the trench and will have to be hauled off site.
2. Backfill Requirements
 - A. Conduit Backfill
 Backfill within 6" of the conduit shall be free of solid material greater than 4" in maximum dimension or with sharp edges likely to damage it. The balance of backfill shall be free of solid material greater than 8" in maximum dimension.
 - B. Direct Burial Cable Backfill
 Backfill within 4" of the cable shall consist of select material or sand with no sharp rocks, no rocks larger than 3/8" and the ratio of the rock to soil not to exceed one part rock to three parts soil. The next 12" shall be free of solid material greater than 4" in maximum dimension. The balance of the backfill shall be free of solid material greater than 8" in maximum dimension.
3. Machine compaction shall not be used within 6" of the cable or conduit.

ESS213.DOC		
DATE: 1/08/92 REV. NO.: 2 REV. DATE: 3/03/97 APPROVAL: MLD	TRENCHING EXCAVATION BACKFILL CODES	Electric Service Specifications 
213		<i>PROPRIETARY MATERIAL</i>

STREET SURFACE REPAIR CODES
(see page 214.1 for "type" details)

1. UTSRAP = A.C. pavement street repair for a UTP trench, 24" width, type "A" repair.
2. UTSRAPX = Same as item #1, but in one (1) sq. ft. increments (see note 1).
3. UTSRC = Concrete street repair, 48" width, type "B" repair.
4. UTSRCX = Same as item #3, but in one (1) sq. ft. increments (see note 1).
5. UTSRAC = A.C. base course and A.C. pavement course repair, 48" width, type "C" repair.
6. UTSRACX = Same as item #5, but in one (1) sq. ft. increments (see note 1).
7. UTSRCA = ABC slurry subgrade with A.C. base course and A.C. pavement course repair, 48" width, type "D" repair.
8. UTSRCAX = Same at item #7, but in one (1) sq. ft. increments (see note 1).
9. UTRGC = Curb and gutter repair (rolled or square) for one foot of length.

NOTES

1. Multiply the length of the repair (in feet) by the width of the repair (in feet) for the quantity to be used. Round off dimensions to nearest foot.
2. Minimum trench width in public right-of-way is 12".
3. These codes may be used to repair asphalt or concrete in other locations not in a public right-of-way (e.g. parking lots or private driveways).
4. Spoil removal time is included in the concrete, slurry and ABC backfill Compatible Unit Codes.
5. Excavation within proposed or dedicated rights-of-way shall be compacted to the specifications of the municipality concerned.

ESS214.DOC	TRENCHING	Electric Service Specifications
DATE: 4/15/86 REV. NO.: 2 REV. DATE: 5/17/93 APPROVAL: MLD	STREET SURFACE REPAIRS	
214	Page 1 of 2	PROPRIETARY MATERIAL

SLURRY BACKFILL MIXES - SPECIFICATION SRP 02227

STOCK CODE NO.	ABBREV.	SLURRY TYPE	MAX. AGGREGATE SIZE	SLUMP RANGE	CEMENT (LBS/CU.YD.)	DESCRIPTION
00-0100	ASB	AGGREGATE SLURRY BACKFILL	3/4" (19mm)	6"-9" (152-229mm)	None	WASHED GRAVEL AND SAND OR CLEAN ABC. NO CEMENT. BACKFILL AROUND WOOD AND CONCRETE TRANSMISSION LINE POLES AND IN TRENCHES (NO LOADS)
00-0101	DEPB	DIRECT EMBED POLE BACKFILL	3/8" (9.5mm)	8"-9"(A) (152-229mm)	378 (223kg/m ³)	LEAN CONCRETE, MIN. 1000 PSI (6.9MPa) AT 28 DAYS. USE AS BACKFILL AROUND DIRECT EMBED STEEL POLES.
00-0104	LMB 1/2 SACK	LEAN MIX BACKFILL W/ 1/2 SACK CEMENT PCY	1" (25.4mm)	6"-9" (152-229mm)	47 (28kg/m ³)	WASHED GRAVEL AND SAND OR CLEAN ABC. WITH CEMENT. TRENCH BACKFILL (LOW LOAD AREAS - STREETS AND LOTS).
00-0105	LMB 1 SACK	LEAN MIX BACKFILL W/ 1 SACK CEMENT PCY	1" (25.4mm)	6"-9" (152-229mm)	94 (58kg/m ³)	WASHED GRAVEL AND SAND OR CLEAN ABC. WITH CEMENT. TRENCH BACKFILL IN LOW LOAD AREAS (STREETS AND LOTS). USE IN LIEU OF LMB 1/2 SACK AS REQUIRED BY CITIES.
00-0106	LMB 1-1/2 SACK	LEAN MIX BACKFILL W/ 1-1/2 SACK CEMENT PCY	1" (25.4mm)	6"-9" (152-229mm)	141 (84kg/m ³)	WASHED GRAVEL AND SAND OR CLEAN ABC. WITH CEMENT. STRUCTURAL BACKFILL UNDER FOUNDATIONS AND AS THERMAL FILL AND/OR MECHANICAL PROTECTION OF DUCT BANKS.
00-0109	DBS	DUCT BANK BACKFILL W/ SAND	NONE	6"-9" (152-229mm)	378 (223kg/m ³)	GROUT FOR PUMPING AROUND CONDUITS PLACED IN PIPE SLEEVES
00-0160	RFG GRAVEL	WASHED GRAVEL FOR RFG	1-1/2" (38.1mm)	> WASHED GRAVEL, THE INITIAL COMPONENT OF TWO COMPONENT BACKFILL FOR DIRECT EMBED STEEL AND CONCRETE POLES, PLACED BY READY-MIX TRUCK. > FLOWABLE FLY ASHCEMENT/LIME GROUT, PLACED TO FILL VOIDS IN RFG GRAVEL (NO PUMPING REQD).	ENGINEERING APPROVAL REQUIRED FOR USE OF THIS BACKFILL	
00-0161	RFG GROUT	LIME AND FLY ASH GROUT FOR RFG	NONE			

A. Maximum water/cement ratio .60; use superplasticizers as required to obtain slump

AGGREGATE FOR COMPACTED FILLS - SPECIFICATION SRP 02230

STOCK CODE NO.	MATERIAL	NOM. MAX. AGGREGATE SIZE	DESCRIPTION
00-0112	AGGREGATE BASE (ABC)	1" (25.4mm)	WELL GRADED UNWASHED SAND AND GRAVEL USED IN COMPACTED SUBGRADES FOR PAVEMENTS AND GENERAL BACKFILL.
00-0114	SELECT TYPE A	3" (76.2mm)	WELL GRADED UNWASHED SAND AND GRAVEL USED FOR COMPACTED BACKFILL. COARSER THAN ABC TYPICALLY USED UNDER FOUNDATIONS AND IN LARGE AREAS OF COMPACTED BACKFILL.
00-0115	SELECT TYPE B	1-1/2" (38.1mm)	
00-0116	SURFACE MATERIAL	1" (25.4mm)	SAME MATERIAL AS ABC WITH PLASTIC FINE SOILS (CLAYS AND SILTS) TO PROVIDE A BINDING ACTION, USED AS AN AGGREGATE SURFACE IN LOW VOLUME TRAFFIC AREAS

SRP Stock Code Number	Description	Specified Compressive Strength @ 28 Days f _c MPa	Course Aggregate Max. Size mm (in) ASTM C33 Table 2	Slump Range mm (in)	Maximum Water/Cementitious Material Ratio (By Wt.)	Remarks
0000220	MAG C or Canal Bottom	15	24 (1) #57	75-125 (3-5)	N/A	
0000221	Slipform					
0000222	Masonry Grout	20	12.5 (1/2) #7	75-100 (3-4)	N/A	Min. cement 250 kg/m ³ (423 lbs/yd ³)
0000230	MAG A or Normal Flowable					
0000231	C.I.P. Pipe 1050 mm (42") & larger	20	12.5 (1/2) #7	75-100 (3-4)	0.55	75-85 Coarse aggregate passing 9.5mm (3/8") sieve
0000232	C.I.P. Pipe 900mm (36") & smaller					
0000233	Cable Trench	20	12.5 (1/2) #7	75-100 (3-4)	0.47	75-85 Coarse aggregate passing 9.5mm (3/8") sieve
0000234	Shotcrete					
0000235	Ditchbank	30	25 (1) #57	150-200 (6-8)	0.50	Use superplasticizer
0000240	MAG AA or Normal					
0000241	Normal with air	30	25 (1) #57	150-200 (6-8)	0.50	Use superplasticizer
0000242	Flowable					
0000243	Flowable with air	30	25 (1) #57	150-200 (6-8)	0.50	Use superplasticizer
0000244	Precast without flyash					
0000250	Normal	35	25 (1) #57	150-200 (6-8)	0.45	Use superplasticizer
0000251	Normal with air					
0000252	Flowable	35	25 (1) #57	150-200 (6-8)	0.45	Use superplasticizer
0000253	Flowable with air					
0000254	Normal without flyash	35	25 (1) #57	150-200 (6-8)	0.45	Use superplasticizer
0000255	Normal with small aggregate					
0000256	Normal with small aggregate & without flyash	35	25 (1) #57	150-200 (6-8)	0.45	Use superplasticizer
	Normal with small aggregate & without flyash					

See Reverse Side for ABC and Backfill

MATERIAL OPEN P.O. 1095/1096
CONCRETE MIXES

APPENDIX
“C”

BIDDERS LIST FOR DUCTBANK INSTALLATION

SRP ESLC HARD DOLLAR CONTRACTOR PHONE LIST

Trenching & Boring Contractors

<u>Name/Vender#</u>		<u>Fax</u>	<u>Office</u>	<u>Mobile</u>	<u>Pager</u>	<u>Emergency</u>
<u>B&F Contracting</u>	Tom Foley	582-2663	582-1170	399-0522	780-5253	
31826-001	4/97 Bruce Balls	"	"	399-0523	780-5252	
<u>Beecroft Trenching *</u>	Charlie Beecroft	243-5273	243-5212	390-1680		924-3005
(Trench Only)	Dan Stiffy	"	"	558-4500		386-6773
18596-001	8/85 Doug Wilstead	"	"	376-2068		266-1780
	Nody Guillian	"	"	397-3562		963-6996
<u>Bonneville Construction</u>	Alan Shaw	934-4642	931-1244			
Dropped 5/13 E-W	Craig Snelson	"	"	397-8073		
35728-001	1/97					
<u>Desert Pipeline</u>	Dwayne Osadchuk	585-7977	585-9400	376-3319	1 (800) 405-6384	
35129-001	6/96 Carl Todd	"	"	919-6071	1 (800) 558-2241	
<u>ECSI of Arizona</u>	Frank Chilcoat	934-4077	934-4887	376-9117		979-1879
35729-001	2/97 Joe Kruger	"	"	319-8009		
<u>The Fishel Company</u>	Vic McKinney	233-2930	233-6914	397-9208	261-0432	261-0432
26199-001	2/90 Dennis Morris	or	233-6959	397-9209	401-6168	401-6168
	Bill Pauley	233-0801	233-6907			
<u>Hard Rock</u>	Bob Seaman	780-9795	492-0518			492-0518
26710-001	5/90 Memo (Guillermo)	"	"	710-2523	210-4119	"
	Tom Merritt	"	"	710-2521	210-4121	"
	Linda Consoni	"	"	206-8422		488-5675
<u>Henkels & McCoy</u>	Randy Fuller	861-1194	861-0688	558-1128	225-4402	225-4402
26947-002	4/90 Walt Jones	"	"	531-6042	225-4404	225-4404
<u>Kleven Construction</u>	Maurice Hathaway	268-7390	268-6995	397-1575	202-2709	892-8240
25914-001	12/89 Frank Cruse	"	"	397-1719	250-9052	833-5952
	Jerry Kleven	"	"	397-2269	250-9003	250-9003
	John Lusk	"	"	397-1099	250-6101	380-3616
<u>Klondyke, Inc.</u>	Jim Willow	869-6766	869-6969	639-8102		
20810-001	12/86 Jim Grose	"	"	639-8101		
	Jim Easterly	"	"	769-9414	306-0610	306-0610
	Don Easterly	"	"	639-8108		
<u>Pauley Construction</u>	Bob Hendrickson	581-2400	581-1200	531-6593	259-6195	872-1404
32536-001	11/93 Jim Harrison	"	"	710-9933	220-8702	502-0188
	Steve Wafle	"	"	531-6589	1 (800) 770-4564	996-5648
<u>Somerville Construction *</u>	John Somerville	276-0224	243-4130	397-5575		
30841-001	9/92 Kevin Culp	"	"	397-5549		
	Craig Denere	"	"	399-3795		409-5016
<u>Trench Tech, Inc.</u>	Dan Zambeck	948-8446	948-8823	377-4767	656-3565	
29917-001	4/97 Mike Kane	"	"	531-9037	656-5474	
	Kurt Wagner	"	"	810-0917	340-5459	
<u>Triangle Communications</u>	Doy Humphrey	256-2030	256-0809			
36256-001	8/97 Tom (tj) Jackson	"	"	232-4350	392-9996	877-0738
<u>Utility Const Co. *</u>	Ken Nickum	649-0577	649-0668	540-9492		899-9492
(East Valley Only)						
35316-001	1/97					

* Minority Owned

Sheet 1 of 2

AS OF 9/25/97

EXCELIS\DISTSHR\BRYAN\CONTRACTORS.XLS

Cased Bore Contractors

<u>Name/Vendor #</u>	<u>Fax</u>	<u>Office</u>	<u>Mobile</u>	<u>Pager</u>	<u>Emergency</u>
<u>Arizona Boring</u> 10233-001 10/83	Clarence Shumway Spencer Shumway	237-2022 "	237-2755 "	257-6969 "	237-2755 "
<u>Desert Pipeline</u>	See Sheet I				
<u>Henkels & McCoy</u>	See Sheet I				
<u>Horizontal Boring</u> 15202-001 8/84	Guy Romero	237-4188	254-3048	228-9588	360-6250 254-0035
<u>Kleven Construction</u> 25914-001 12/89	Frank Cruse	268-7390	268-6995	397-1719	250-9052 833-5952
<u>Specialized Services</u> 29052-001 8/91	J.R. Veidmark III	997-4811	997-6164	919-6346	591-4808 942-2909

Asphalt/Pavement Contractors

<u>Name/Vender#</u>	<u>Fax</u>	<u>Office</u>	<u>Mobile</u>	<u>Pager</u>	<u>Emergency</u>
<u>American Asphalt</u> 33836-001 3/95	Steve Matteson	256-7342	256-7376	919-5529	498-8769
<u>Dohrn Companies</u> 33132-001 6/94	Rick Dohrn Andy	268-1876 "	990-7862 "	NO ASPHALT WORK AS OF 7/97 228-3703	
<u>Klondyke, Inc.</u> 20810-001 12/86	Howard Varner	869-6766	869-6969	639-8100	
<u>Markham Contracting</u> 30011-001 4/92	Michael Frank	997-8923	997-9623		
<u>Specialized Surfacing</u> 35441-001 10/96	Chuck Cassise	437-3370	437-4461		