

CONSTRUCTION SPECIFICATIONS

FOR

FCD CONTRACT NO. 93-08
COLTER CHANNEL

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

Prepared By:

C.R.S.S. Civil Engineering, Inc.
4041 North Central Avenue
Suite 650
Phoenix, Arizona 85012-3306



(Engineer's Seal)

Recommended By: Edward A. Raleigh Date: 9/23/93
Edward A. Raleigh, P.E., Chief
Engineering Division

Approved By: Neil S. Erwin Date: 9/30/93
Neil S. Erwin, P.E.
Chief Engineer and General Manager

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

A470.503

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ATTENTION

ALL PROSPECTIVE BIDDERS

A.R.S. Sec. 34-201 now requires that construction bid proposals be accompanied by a certified check, cashier's 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 County-supplied bond forms is encouraged, but is not mandatory.

Please submit your bids accordingly.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT 93-08

COLTER CHANNEL

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**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION TO BID**

BID OPENING DATE: November 4, 1993

LOCATION: North of the City of Litchfield Park, one quarter mile north of Camelback Road from Litchfield Road to the Agua Fria River.

PROPOSED WORK: This project provides for the Excavation of a 2.82 mile long earthen channel; construction of two cast-in-place bridges, and assorted channel features.

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 above date and then publicly opened and read at 2801 West Durango Street, Phoenix, Arizona 85009. No bids will be received after the time specified for bid opening. 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:

It is the policy of Flood Control District of Maricopa County to endeavor 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, handicap or national origin.

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. Verification 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.

CONTRACT TIME:

All work on this Contract is to be completed within two hundred fifty (250) calendar days after date of Notice to Proceed.

MBE/WBE PARTICIPATION:

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.

PRE-BID CONFERENCE:

A Pre-bid conference will be held on October 26, 1993 at 10:00 a.m. in the Flood Control District Adobe room, 2801 West Durango Street, Phoenix, Arizona 85009. It is in the best interest of prospective bidders to attend the Pre-bid Conference.

Questions or items for clarification may be addressed to the Chief, Contracting Branch, in writing, at least ten (10) days prior to bid opening date. Where appropriate, any answers or clarifications affecting the cost may be addressed to all bidders in an addendum. Verbal interpretations, unless specifically addressed by addendum, shall not be binding nor have any legal effect.

PROJECT PLANS, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS:

Plans and Construction Specifications may be obtained from Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009 upon payment of \$30.00 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 \$37.50 will not be refunded. Regardless of circumstances, we cannot guarantee mail delivery. Each bid must be accompanied by a Bid Bond, 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 as liquidated damages.

All bids are to be marked in accordance with Section 102.9 of the 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.

As provided for in the Agenda Information Form authorizing the Invitation to Bid.

PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

QUANTITY	UNIT	DESCRIPTION
284,310	C Y.	CHANNEL EXCAVATION
2,062	C.Y.	STRUCTURAL CONCRETE
225	L.F.	6 INCH WATER LINE
521	L.F.	REINFORCED CONCRETE PIPE

PROPOSAL

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

Gentlemen:

The following Proposal is made for excavation of a 2.82 mile long earthen channel, construction of two cast-in-place bridges, and assorted channel features, FCD 93-08, Colter Channel in the County of Maricopa, State of Arizona.

The following Proposal is made on behalf of

and no others. Evidence of authority to submit the Proposal is herewith furnished. The Proposal 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 Proposal, 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 this Proposal, have been carefully examined and also that the site of the work 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 Proposal 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 two hundred fifty (250) **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 Proposal Guaranty in the amount and character named in the Invitation to Bid is enclosed amounting to not less than ten (10) percent of the total bid, which Proposal Guaranty is submitted as a guaranty of the good faith of the Bidder and the Bidder will enter into written contract, as provided, to do the work, if successful in securing the award thereof; and it is hereby agreed that if at any time other than as provided in the Proposal requirements and conditions the Undersigned should withdraw its Proposal, if the Proposal is accepted and there should be failure on the part of the Undersigned to execute the Contract and furnish satisfactory Bonds and Sureties as herein provided, the Flood Control District of Maricopa County in either of such events, shall be entitled and is hereby given the right to retain the said Proposal Guaranty as liquidated damages.

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

- Addendum No. _____ Dated _____

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

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: Colter Channel

CONTRACT: FCD 93-08

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
107	NPDES/SWPP Permits	LS	1		
202	Mobilization	LS	1	50,000.00	50,000.00
206	Structural Backfill	C.Y.	685		
211	Fill Construction	C.Y.	32142		
215	Channel Excavation	C.Y.	284310		
220-1	Riprap (6-inch D50)	C.Y.	1918		
220-2	Riprap (4-inch D50)	C.Y.	62		
220-3	Grouted Riprap	C.Y.	370		
301	Subgrade Preparation	S.Y.	13040		
310-1	Aggregate Base (Reconstruction)	TON	6230		
310-2	Aggregate Base (Access Roads)	TON	17250		
315	Bituminous Prime Coat	TON	19		
321	Asphaltic Concrete (C-3/4)	TON	2670		
329	Bituminous Tack Coat	TON	1		
334-1	Preservative Seal	TON	2		
334-2	Sand Blotter	TON	8		
340-1	Concrete Walks	S.F.	320		
340-2	Embankment Spillway	EA	8		
350-1	Miscellaneous Removals	L.S.	1		
350-2	Removal of Existing Improvements	L.S.	1		
350-3	Removal and Disposal of Trash	TON	200		
350-4	Removal and Disposal of Discarded Tires	TON	2		
401-1	Traffic Control and Detour	L.S.	1		
401-2	Airline Canal/Maintenance Rd Detour	L.S.	1		
405	Survey Monuments (MAG 120-2, Type D)	EA	3		
420	Chain Link Fence	L.F.	348		
421-1	Wire Fence	L.F.	28932		
421-2	Fence Gates (14 foot)	EA.	20		
502-1	Drilled Shafts (30 inch)	L.F.	1100		
502-2	Drilled Shafts (24 inch)	L.F.	60		
505-1	Class "AA" Concrete	C.Y.	1497		

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: Colter Channel

CONTRACT: FCD 93-08

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
505-2	Class "A" Concrete	C.Y.	565		
505-3	Reinforcing Steel	LB.	448272		
505-4	Class "B" Concrete	C.Y.	1955		
505-5	Class "B" Concrete (with Fiber)	C.Y.	980		
505-6	Catch Basin (MAG 537, Type G)	EA	1		
505-7	Siphon Headgate Headwall	EA	1		
505-8	Headwall (MAG 501, Type U)	EA	2		
505-9	Headwall (MAG 501-3, Modified)	EA	2		
505-10	Siphon Headwal (MAG 502-1)	EA	2		
505-11	Siphon Manhole	EA	1		
505-12	Eight-Pipe Headwall	EA	2		
515	Steel Flume Pipe (12 inch)	L.F.	336		
520-1	Barricade	L.F.	738		
520-2	Steel Handrail	L.F.	90		
610-1	Waterline Relocation (6 inch)	L.F.	225		
610-2	Waterline Valves	EA	2		
610-3	Air/Vacuum Release Valve	EA	1		
615-1	VCP Siphon (8 inch Cleanout)	L.F.	18		
615-2	VCP Siphon (15 inch)	L.F.	240		
615-3	VCP Siphon (21 inch)	L.F.	161		
618-1	Reinforce Concrete Pipe (18 inch)	L.F.	57		
618-2	Reinforced Concrete Pipe (24 inch)	L.F.	188		
618-3	Reinforced Concrete Pipe (36 inch)	L.F.	156		
618-4	Reinforced Concrete Pipe (42 inch)	L.F.	120		
621-1	Corrugated Metal Pipe (36 inch)	L.F.	128		
621-2	Corrugated Metal Pipe (21"X15" Arch)	L.F.	67		
621-3	Corrugated Metal Pipe (24" X35" Arch)	L.F.	214		
621-4	Flap Gates (36-inch)	EA	8		
635	Concrete Lined Ditch	L.F.	1123		

TOTAL BID AMOUNT: _____

IF BY AN INDIVIDUAL:

(NAME - TITLE)

(ADDRESS)

DATE

(PHONE)

IF BY A FIRM OR PARTNERSHIP:

(FIRM NAME)

(FIRM ADDRESS)

BY: _____
(NAME - TITLE)

(PHONE)

DATE

** Name and Address of Each Member:

** The name and post office address of each member of the firm or partnership must be shown.

IF BY A CORPORATION:

(CORPORATE NAME)

(CORPORATION ADDRESS)

BY: _____

(PHONE)

TITLE: _____

DATE _____

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

(PRESIDENT)

(ADDRESS)

(SECRETARY)

(ADDRESS)

(TREASURER)

(ADDRESS)

* The name of the State under which the laws of the Corporation was chartered and names, 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 that are to be used in the event the undersigned should enter into contract with the Owner. This is not an exhaustive or inclusive list, however, no change in the subcontractors listed will be made unless first approved by the Owner.

(Signature) _____

SURETY BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, (hereinafter called the Principal), and the _____, a corporation duly organized under the laws of the State of _____, 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 FCD 93-08, Colter Channel.

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 Certificates 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 _____ day of _____, A.D., 1993.

AGENCY OF RECORD, STATE OF ARIZONA _____

PRINCIPAL _____

AGENCY ADDRESS _____

BY: _____

TITLE: _____

SURETY _____

BY: _____

TITLE _____

BOND NUMBER _____

ATTACH SURETY POWER OF ATTORNEY

VERIFICATION OF LICENSE

Pursuant to A.R.S. Sec. 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. Sec. 42-1305) is: _____; and that, if any exemption to the above licensing requirements is claimed;

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

(2) The names(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. SEC. 13-2704.

DATE: _____

SIGNATURE OF LICENSEE: _____

COMPANY: _____

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

- A. The following conditions will apply in the calculation of the percentage attainment:
1. All MBE/WBE firms used in attainment of the goal must be certified with the Maricopa County Minority Business Office (MBO). The MBO is located at 100 West Clarendon, Suite 1420, Phoenix, Arizona 85013, telephone 506-8653. 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 MBE/WBE amount to be applied to the goal will be based on that portion (dollar value) of the contract that the MBE/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 MBE/WBE participation will be credited as 10 percent.
 3. Prime Minority Contractor:
An MBE/WBE prime contractor will be credited with the MBE/WBE participation for that portion of the contract which they themselves perform plus that portions subcontracted to other MBE/WBE firms. For example, if an MBE/WBE prime contractor proposes to perform 50 percent of a project quoted at \$1,000,000 and subcontracts 25 percent to an MBE firm and 25 percent to a non-MBE/WBE firm, MBE/WBE participation will be credited as 75 Percent, or \$750,000.
 4. Minority-Non-Minority Joint Venture:
A joint venture consisting of MBE/WBE participation and non-MBE/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 MBE/WBE firm. For example, if a MBE/WBE and non-MBE/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 MBE/WBE partner in the joint venture, MBE/WBE participation will be credited at 25 percent or \$250,000.
 5. Lower Tier Non-MBE/WBE Participation:
MBE/WBE subcontractors proposing to further subcontract to non-MBE/WBE contractors shall not have that portion of subcontracting activity considered when determining the percentage of MBE/WBE participation.
 6. MBE/WBE Suppliers:
Any MBE/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 MBE/WBE participation.
 7. MBE/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 "MBE/WBE Assurances Affidavit", must be completed and submitted with the bid-- FAILURE TO DO SO SHALL BE CAUSE FOR REJECTION OF THE BID.
- A SAMPLE of the "Actual MBE/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 MBE/WBE participation by MBE/WBE firm name and the relative dollar value of the MBE/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 MBE/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 100 W. Clarendon, Suite 1420, Phoenix, Arizona 85013. Telephone number is 506-8653).

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 Minority Business Office (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. (SEE FOLLOWING NOTE)
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.

NOTE: THE ABOVE GOOD FAITH EFFORTS MUST HAVE BEEN CONDUCTED DURING THE BIDDING PERIOD AND PRIOR TO THE BID OPENING WITH SUBSTANTIAL TIME IN ORDER TO ALLOW FOR A RESPONSE FROM POTENTIAL M/WBE SUBCONTRACTORS. ORIGINAL CONTACT BY A PRIME CONTRACTOR JUST PRIOR TO OR ON THE BID OPENING WILL NOT BE CONSTRUED AS HAVING PROVIDED SUFFICIENT RESPONSE TIME FOR SUBMISSION OF SUBCONTRACT BIDS.

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 Officer 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 (MBO) 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.

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 will result in rejection of the proposal.

I, _____ do hereby acknowledge that I am
the _____ of _____
who has been identified as the selected contractor on Flood Control District Project/Contract
No. FCD 93-08, Colter Channel

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 OF 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	Name	Date	Tel. No.	Date
----------------------	------	------	----------	------

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
--------------------	---------------------------------

<hr/>	<hr/>

* 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 SHALL 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,

(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 Affidavit will be completed and returned with "None" so stated therein, together with the documentation of 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, 100 West Clarendon, Suite 1420, Phoenix, Arizona 85013, Telephone 506-8653, following the bid opening and verbal notification from the Procurement Officer of the Procurement Agency; a SAMPLE affidavit form for reference purposes follows.

Name of Firm

Signature

Title

STATE OF ARIZONA)
)ss.
County of Maricopa)

Subscribed and sworn to before me this _____ day of _____, 199__.

BY: _____

Notary Public

MARICOPA COUNTY
MINORITY/WOMEN-OWNED BUSINESS ENTERPRISES PROGRAM

MBE/WBE PARTICIPATION REPORT
(To be attached with Request for Pay)

Date: _____
Contractor: _____
Contact Person: _____
Address: _____
Telephone: _____

Project: Colter Channel
Contract Number: ECD 93-08
For Pay Period of: _____

Subcontractor: _____
Person to Contact: _____
Address: _____
Telephone Number: _____

Type of Firm: _____
Class of Work: _____

Subcontract Amount: _____
Amount Earned
(Commission) This Period: _____

Total Earned by This Subcontractor: _____
Total MBE/WBE Contract Goal, %: Ten Percent (10%)
Total Cumulative MBE/WBE _____

Participation on This Contract, %: _____
MBE/WBE subcontract payment made
during this reporting period (yes or no): _____

cc: Minority Business Office
100 West Clarendon, Suite 1420
Phoenix, Arizona 85013

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of _____, 1993
by and between FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, hereinafter called the OWNER, acting
by and through its BOARD OF DIRECTORS, and _____
hereinafter called the CONTRACTOR.

WITNESSTH: That the said CONTRACTOR, for and in the consideration of the sum of _____
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 FCD Contract 93-08, 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 (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 the time, or times,
stated in the proposal pamphlet.

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. Sec. 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. Sec. 34-221.

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.

PARTY OF THE FIRST PART

BY: _____
Printed Name

BY: _____
Signature

Title

DATE: _____

Tax Identification Number

RECOMMENDED BY:

CHIEF ENGINEER AND GENERAL MANAGER
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

DATE: _____

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 of Maricopa County.

BY: _____
GENERAL COUNSEL, FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY

DATE: _____

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PARTY OF THE SECOND PART

BY: _____
CHAIRMAN, BOARD OF DIRECTORS

DATE: _____

ATTEST:

CLERK OF THE BOARD

**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, _____ (hereinafter called the Principal), As Principal, and _____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ (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 Obligee), in the amount of _____ dollars (\$ _____), 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 Flood Control District of Maricopa County, dated the _____ day of _____, 1993 for FCD Contract 93-08 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 said Principal shall promptly pay 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 Title 34, Chapter 2, Article 2, of the 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 it was copied at length in this Agreement.

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

Witness our hands this _____ day of _____, 1993.

PRINCIPAL SEAL

BY: _____

AGENT OF RECORD, STATE OF ARIZONA

AGENT ADDRESS

SURETY SEAL

BY: _____

BOND NUMBER. _____

**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, _____ (hereinafter called the Principal), As Principal, and _____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ (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 _____ dollars (\$ _____), 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 Flood Control District of Maricopa County, dated the _____ day of _____, 1993, for FCD Contract 93-08 , 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 said Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extension thereof, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligation shall be void, otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of said Title, Chapter, and Article, to the extent as if it was copied at length herein.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as may be fixed by a judge of the court.
Witness our hands this _____ day of _____, 1993.

PRINCIPAL SEAL

BY: _____

AGENT OF RECORD, STATE OF ARIZONA

AGENT ADDRESS

SURETY SEAL

BY: _____

BOND NUMBER. _____

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 CERTIFICATE OF INSURANCE

CONTRACT FCD FCD 93-08

PROJECT TITLE Colter Channel

NAME AND ADDRESS OF INSURANCE AGENCY	INSURANCE COMPANIES AFFORDING COVERAGES
	Company Letter A
	Company Letter B
NAME AND ADDRESS OF INSURED	Company Letter C
	Company Letter D
	Company Letter E
	Company Letter F
	Company Letter G

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.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	EXPIRATION DATE	LIMITS OF LIABILITY IN \$1,000 MINIMUM each occurrence	
	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			BODILY INJURY per person	2,000,000
				PROPERTY DAMAGE each occurrence	2,000,000
	COMPREHENSIVE AUTO <input checked="" type="checkbox"/> LIABILITY & NON-OWNED			SAME AS ABOVE	
	<input type="checkbox"/> EXCESS LIABILITY			NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	
	<input checked="" type="checkbox"/> WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY			STATUTORY each accident	\$100
	<input type="checkbox"/> ENGINEERS PROFESSIONAL LIABILITY			EACH CLAIM AND ANNUAL AGGREGATE	
	<input checked="" type="checkbox"/> OTHER ADD MARICOPA COUNTY AS ADDITIONAL INSURED.				

Except for Professional Liability Insurance and Workers' Compensation Insurance, the Flood Control District of Maricopa County is added as an additional insured in respect to liability arising in any manner out of the performance of any contract entered into between the insured and the Flood Control District or liability arising out of any services provided or duty performed by any party as required by statute, law, purchase order, or otherwise required. 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 cancelled, or materially changed to effect 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 _____

AUTHORIZED REPRESENTATIVE _____

Dredging Forms Form BB SRL

It is further agreed that:

The Contractor hereby agrees to indemnify and save harmless the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, Maricopa County, or any of their departments, agencies, officers or employees, from and against all loss, expense, damage or claim of any nature whatsoever which is caused by any activity, condition or event arising out of the performance or nonperformance of any of the provisions of this Agreement.

The FLOOD CONTROL DISTRICT OF MARICOPA COUNTY and Maricopa County shall in all instances be indemnified against all liability, losses and damages of any nature for or on account of any injuries to or death of persons or damages to or destruction of property arising out of or in any way connected with the performance or nonperformance of this Agreement, except such injury or damage as shall have been occasioned by the negligence of the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY or Maricopa County.

The above cost of damages incurred by the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, Maricopa County, or any of their departments, agencies, officers or employees, or others aforesaid shall include in the event of an action, court costs, expenses for litigation and reasonable attorney's fees.

Firm

Date

Principal

Title

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 93-08
COLTER CHANNEL DRAINAGE IMPROVEMENTS**

SUPPLEMENTARY GENERAL CONDITIONS

ELEMENTS OF WORK:

The work includes the following major elements:

1. Construction of 2.82 miles of earthen channel.
2. Construction of bridges at Dysart and El Mirage Roads.
3. Construction of a box culvert overshoot for the Airline Canal.
4. Construction of six grade control structures and eight side-weir structures.
5. Construction of two tributary reinforced concrete pipe culverts.
6. Relocation of miscellaneous water and irrigation utilities, and local access roads.

LOCATION OF WORK:

The project is located in Maricopa County immediately north of the community of Litchfield Park approximately one-quarter mile north of Camelback Road between Litchfield Road and the Agua Fria River.

SPECIFICATIONS:

Except as otherwise required in these Supplementary General Conditions and the 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, latest revision, together with Maricopa County Department of Transportation Supplements to the Uniform Standard Details.

PRECEDENCE OF CONTRACT DOCUMENTS

In case of a discrepancy or conflict, Project Plans will govern over the MAG Standard Specifications and Details. The Supplementary General Conditions and Special Provisions will govern over the MAG Standard Specifications and Details and the Project Plans.

PAYMENT

Payment will be made for only those items listed in the proposal and will not be made in accordance with the measurement and payment provisions of the Standard Specifications where this differs from the items listed in the proposal. All material and work necessary for completion of this project are included in proposal items. Any work or material not specifically referred to in these items is considered incidental to the item and included in the unit price.

WORK STANDARDS

The Contractor shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor Regulations (29 CFR Part 5). Contractor shall also comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and all applicable federal regulations under the Act, including 28 CFR Parts 35 and 36.

CONTRACT TIME:

The Contractor shall commence work within seven (7) calendar days after the date of the Notice to Proceed and complete all work within two hundred fifty (250) calendar days from the effective date specified in the Notice to Proceed. In the event the Contractor elects to work overtime, second shifts, weekends, or legal holidays, to complete the work required by the Project Plans and these Supplementary General Conditions or Construction Special Provisions, the Contractor will be responsible to bear the additional costs that may be incurred by the Owner including engineering, inspections, testing, surveying and construction administration all in accordance with Section 108.5. These costs will be deducted from the monies due to the Contractor for each Payment Request. The costs associated with these items shall be incidental to the unit price items in the bid schedule.

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 not be construed to void any provisions in the contract which requires notice of delays, provides for arbitration or other procedure for settlement, or provides for liquidated damages.

WATER, LIGHT, POWER, HEAT, TELEPHONE:

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

PROGRESS SCHEDULE:

The Contractor shall submit a proposed work progress schedule to the Engineer for review before starting work. Weekly updates shall be submitted to the Owner's Inspector at the weekly coordination meeting.

MATERIALS SOURCES:

Select Material, Aggregate Base, Mineral Aggregate, concrete, steel products and pipe shall be obtained from commercial sources. The Contractor shall pay all royalties, or any other charges or expenses, incurred in connection with the securing and hauling of the material. The Contractor will be required to furnish the 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.

GENERAL:

It shall be the Contractor's responsibility to protect the structure and construction site from damage that may occur during the construction period and until final acceptance of the completed project by the Engineer.

Upon completion of the construction, the Contractor shall clear the work area of all debris.

The property owner west of Dysart Road may be underway with the construction of a planned development during the construction of the Colter Channel project, and MCDOT may also be underway with its Dysart Road Improvements project. The Contractor will coordinate as required with developer and MCDOT contractors to avoid conflicts and other problems.

The Contractor will coordinate with the farm owners in whose fields the channel construction will occur. The Contractor will contact the farm operators at least 30 days and preferably 60 days in advance of disrupting their fields. The farm operators are Mr. Charlie Crews of River Ranch (east of El Mirage Road) at 936-6212 or 390-7620, and Mr. Warren Downs of Suncor (west of El Mirage Road) at 935-2700.

GUARANTEE:

The Contractor shall guarantee all structures for one year against faulty materials, faulty workmanship, and failure to meet the specifications requirements. Said guarantee by the Contractor shall not apply to damage caused by earthquakes or other acts of God, land subsidence or faulty operations or any abuse of the structures by others.

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 FCDMC.
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 FCDMC 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 FCDMC Board of Directors to the office of Chief Engineer and General Manager of the FCDMC acting directly or through its authorized representative, the Chief of the FCDMC Construction and Operations Division.
5. Change the definition for the phrase "Notice of Award" to a letter from the FCDMC advising the Contractor that he is the successful bidder and the FCDMC has accepted its proposal.
6. Whenever the word "District" is used in these Specifications, it shall mean the Flood Control District of Maricopa County.
7. Whenever the word "Consultant" is used in these Specifications, it shall mean CRSS Civil Engineers, Inc.
8. 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.
9. 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.
10. 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.

SECTION 102 - ADDENDA & SUBMISSION OF BIDDING SCHEDULE

Subsection 102.4 - Examination of the Site: The Contractor shall visit the site and become familiar with existing conditions and the proposed construction requirements prior to submittal of its bid.

Subsection 102.5 - Preparation of Proposal: Proposals, including the Bidding Schedule, must be legibly written in ink or typed.

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, must be attached and included as part of the Special Provisions 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 and show appropriate changes to the Bidding Schedule, and receipt of addenda acknowledged in the Proposal shall 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: A list of subcontractors to be employed on the project shall be submitted with the bid, on the form provided in the Proposal. No change of the subcontractors named therein will be made unless first approved in writing by the Owner.

Subsection 102.7 - Irregular Proposals: Add the following to the MAG Specifications:

(F) If bidder fails to complete and submit the Maricopa County Minority and Women-Owned Business Enterprises Assurances Affidavit.

Subsection 102.8 - Proposal Guarantee: No proposal will be read unless accompanied by a proposal guarantee in the proper amount and in the form provided in the proposal pamphlet. Surety bonds will be accepted only on the form/forms, or true copies thereof, provided by the Contracting Agency and included with the specifications. The guarantee shall be made payable and acceptable to the Flood Control District of Maricopa County, as a guarantee that the bidder, if awarded the contract, will execute the contract documents and furnish the required bonds and certificates of insurance, to be forfeited if the Contractor fails or refuses to enter into a contract as required by the bid documents.

The proposal guarantee shall be in the form of a certified check, cashiers check, or surety bond for ten (10%) percent of the amount of the bid. The surety bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona issued by the Director of the Department of Insurance. The surety bond shall not be executed by an individual surety or sureties. The requirement contained in MAG Specifications "...In addition, said company or companies shall be rated "Best A-" or better as required by the Contracting Agency, as currently listed in the most recent Best Key Guide, published by the A.M. Best Company...." is hereby removed and of no effect.

SECTION 103 - AWARD AND EXECUTION OF THE CONTRACT

Subsection 103.5 - Requirement of Contract Bonds: The Performance and Payment Bonds included in the Contract Documents shall be used in the execution of the Contract by the successful bidder. No substitution nor other form of Bond will be allowed. Each such bond shall be executed by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona, issued by the Director of the Department of Insurance. The bond(s) shall not be executed by an individual surety or sureties. The bond(s) shall be made payable and acceptable to the Flood Control District of Maricopa County, and shall be written or countersigned by an authorized representative of the surety who is either a resident of the State of Arizona or whose principal office is maintained in this State, as by law required, and the bond(s) shall have attached thereto a certified copy of Power of Attorney of the signing official.

The requirement contained in MAG Specifications "...In addition, said company or companies shall be rated "Best A-" or better as required by the Contracting Agency, as currently listed in the most recent Best Key Guide, published by the A.M. Best Company...." is hereby removed and of no effect.

Subsection 103.6 - Contractor's Insurance: 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. 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.

Subsection 103.6.1(D) - Contractor's Insurance: Add additional insureds as indicated on the included Certificate of Insurance.

Subsection 103.6.2 - Indemnification of the Contracting Agency Against Liability: Replace with Indemnification on Page 29 of 29 of the Contract Documents.

SECTION 104 - SCOPE OF WORK

Subsection 104.1.2 - Traffic Regulations:

- A. Dysart Road shall be considered a major street.
- B. 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.
- C. Unless otherwise provided for in the following "Special Traffic Regulations" all traffic on this project shall be regulated as specified in Section IV of the Traffic Barricade Manual.

Subsection 104.1.3 - Special Traffic Regulations:

During the construction period, the Contractor shall provide for the following special traffic considerations:

- A. During the construction of the El Mirage Road bridge, El Mirage Road can be closed to through traffic. Local traffic access shall be maintained as required for the agricultural activities in the area. Specifically, access to the "farm road" south of the channel alignment and east of El Mirage Road will be provided. The Contractor will develop and submit a traffic control and signing plan. The plan shall be reviewed and approved by MCDOT, and the Engineer.
- B. A two-lane detour plan has been prepared and included in the construction plans for the construction of the Dysart Road bridge.
- C. The Contractor will construct the canal and maintenance road detours as shown on the plans prior to the construction of the Airline Canal culvert and flume.
- D. The Contractor will maintain access at all times during construction to the ABC Sand & Rock Facility on the north side of the project limits, east of El Mirage Road. Contact Dave Waltemath at 935-1677.

Subsection 104.2 - Boring Logs and Soils Report:

The soil boring logs are available for review at the District. No guarantee is made of the accuracy of the boring logs in the soils report. The Contractor shall make his own determination as to soil and subsurface conditions and shall complete his work in whatever material and under whatever condition he may encounter or create, without extra cost (except as modified in MAG). 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.

SECTION 105 - CONTROL OF WORK

Subsection 105.2 - Plans and Shop Drawings: Shop plans shall be submitted as follows:

Initial submittal for review - three (3) copies, of which one (1) copy will be returned to the Contractor within five (5) working days.

Final submittal for approval - five (5) copies, of which two (2) copies will be returned to the Contractor within five (5) working days.

Subsection 105.2.1 - Substitutes and "Or-Equal" Items: 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 105.2.1 (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 the 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 the 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.

105.2.2 - 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 105.2.1(B).

105.2.3 - Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal pursuant to subsections 105.2.1 and 105.2.2. 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 105.2.1(B) and 105.2.2 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.

Subsection 105.6 - Cooperation with Utilities:

- A. An attempt has been made to determine the location of all underground utilities and drainage pipes, culverts, 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. Should the 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. The 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.

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

Maricopa County Department of Transportation, Herb Miller	602/506-4683
Flood Control District of Maricopa County, Fred Fuller	602/506-1501
U.S. West Communications, Beth Wood	602/395-2216
Arizona Public Service Co., John Herrera	602/371-6942
Tierra Buena Water (Valley Utilities), Bob Prince	602/935-1356
Santa Fe Pacific Pipeline Partners, L.P., George Reed/Dan Tarango	213/486-7736
SunCor Farms, Warren Downs	602/935-2700
Tucson Electric Power Company Patti Morris	602/745-3170
Salt River Project Chuck Hughes	602/236-4853

C. Salt River Project, Arizona Public Service, Tucson Electric Power, and the Department of Energy, maintain a high voltage transmission tower corridor along the east end of the project. Do not consider these lines to be insulated. Construction personnel working in the proximity of these lines are exposed to an extreme hazard from electrical shock. 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 the lines and all construction equipment and personnel. (See also H)

D. An outage of the overhead APS power lines along El Mirage Road for construction of the bridge can be obtained by contacting APS (Mr. John Herrera) at least 30 days in advance of the need for the outage. The cost of the outage should be accounted for in the Contractor's bid. Refer to bid item 502.

For construction of the Dysart Road bridge, the Contractor must determine the need for a shoofly of the overhead APS power lines. The cost of the shoofly will be incidental to the construction costs for the bridge and should be accounted for accordingly in the Contractor's bid. Refer to bid item 502. The request for the shoofly must be made to APS at least 60 days in advance of the need for the shoofly. Adjustment to contract time for the purpose of obtaining and to accommodate the outage or the shoofly will not be permitted.

Pole bracing if required, should be accounted for in the Contractor's bid.

E. Flows along Dale Creek, south to Camelback Road, will be maintained until such time as the siphon is constructed and operational.

F. All existing irrigation facilities which cross or are located within the project construction limits must be maintained as operational during construction. If necessary, the Contractor will construct temporary facilities in order to maintain the existing irrigation operations, at no cost to the District.

- G. The Suncor Airline Canal and the Suncor delivery ditch east of the Airline Canal may both convey "reused water". The Contractor should contact Warren Downs at 935-2700 to determine if "reused water" is being conveyed in the canal and ditch. If such water is being conveyed, the Contractor will take appropriate precautions when working in and around this water.
- H. Notify Tucson Electric 72 hours in advance of work under the high voltage transmission lines, so that they may have an inspector on site.

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

- A. The Engineer will set the project survey control line which the construction contractor will use to set line and grade for all construction. The control line shall consist of (1) alignment staking at an interval appropriate to the project requirements and (2) elevation controls, both of which shall be at frequent enough intervals to maintain a line of sight between staking. All other surveying required for the project shall be the contractor's responsibility. The Engineer will not set any construction stakes.
- B. Before any construction work is started, the Engineer shall perform all base surveys and cross sections of existing conditions that may be required as a basis for quantity determination.

Subsection 106.5 - Contractors Marshaling Yards:

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.

Contractor access to the construction limits will be as follows:

- A. An access Temporary Construction Easement from Camelback Road to the west end of the project (see District for map and legal description).
- B. From Dysart and El Mirage Roads.
- C. Along the Airline Canal maintenance roads, subject to the prior written approval of Suncor.
- D. Along existing dirt roads ONLY which cross the Bureau of Land Management parcel (SW 1/4 SE 1/4 Section 13) off of Camelback Road.

SECTION 107 - LEGAL RELATIONSHIPS & RESPONSIBILITY TO PUBLIC

Subsection 107.2 - Permits: The Contractor shall be responsible for being aware of and obtaining all permits and licenses, pay all charges, fees, taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work. Permits for earth moving may be obtained from the Bureau of Air Pollution Control, Maricopa County Department of Health Services, 1845 East Roosevelt, Phoenix, Arizona, telephone number 258-6381.

Subsection 107.2.1 - NPDES Permit Requirements: Add the following to MAG:

- A. This project is subject to the National Pollutant Discharge Elimination System (NPDES) Stormwater 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 stormwater 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. Stormwater 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 the Owner during the preconstruction meeting and shall be subject to review by the Owner prior to implementation.
- C. Contractor shall submit the completed and duly signed NOI forms no later than forty-eight (48) hours prior to the initial start of construction on the project to the following agencies:

EPA Stormwater Notice of Intent
P. Box 1215
Newington, Virginia 22122

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

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

Maricopa County, Current Planning
Planning & Development Division
301 West Jefferson, Third Floor
Phoenix, Arizona 85003
602/506-3301

Failure by the Contractor (or Subcontractors of any tier) to submit NOIs 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 stormwater pollution control devices on the project shall be performed by the Contractor on 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 the Owner along with progress payment requests. Additionally, Contractor shall maintain all stormwater 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, ground water and surface water quality.

Fines and penalties imposed by the EPA against the 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 the 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 the Contractor under any other specification provision of these documents, including Change Conditions. Payment for this bid item shall be: 25% with the first progress payment, and prorated thereafter over the life of the project until the remaining 75% is paid in full.
- 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, Phoenix, Arizona 85009.

Payment for NPDES / SWPPP permit requirements shall be made on the basis of lump sum for all work described in Section 107.2 .1 for:

ITEM 107 - NPDES / SWPPP PERMITS.

Subsection 107.4 - Archeological Reports: The following requirements are added to this subsection: 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 authorized officer and the Engineer. An evaluation of the discovery will be made by the authorized officer and Engineer to determine appropriate actions to prevent the loss of significant cultural or scientific values.

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

The Contractor will provide the 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 the Contractor or by any subcontractors.

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

Subsection 107.9 - Protection and Restoration of Property:

The Contractor shall exercise care to not disturb or damage property, such as agricultural crops and irrigation facilities, etc., outside of the construction limits as identified in the construction plans. All costs for the repair and/or replacement of such disturbance or damage shall be the sole responsibility of the Contractor, and no compensation for such costs will be provided to the Contractor.

Subsection 107.10 - Contractor's Responsibility for Work:

Contractor is advised that the part of the work will be done in the Agua Fria River and across washes and irrigation facilities which are subject to flows of water of varying amounts. Owner assumes no responsibility for notifying Contractor of any anticipated flows in these features, nor for any damages incurred by Contractor to its equipment or to any of the Contractor's work as a result of any flows of water.

SECTION 108 COMMENCEMENT, PROSECUTION & PROGRESS

Subsection 108.9 - Failure to Complete on Time: The actual cost per calendar day incurred by the District for 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 the 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 the Engineer. Nothing contained in this provision shall prohibit the District from deducting from monies due or to become due to the Contractor for any other costs incurred by the District directly attributable to the delay in completing this contract.

Subsection 109.1 - Measurement of Quantities: Measurement for payment shall be made for the actual work completed as determined by the Engineer. Payment will be made at the bid unit price, which price shall include the cost of all labor, materials, tools, equipment, transportation, permits, and incidentals required for performing the work as specified. Monthly Progress Payments of the agreed to value of the work accomplished shall be made by the District.

Measurements of placed materials and/or constructed items will be made after completion of the project to determine compliance with the specifications. Any deficiencies in thickness or width shall be corrected by the contractor before acceptance by the FCDMC.

The cost of all work required under this contract as shown on the plans for which there are no specific items shown on the Bidding Schedule, shall be included in the prices bid for related items.

Subsection 109.2 - Scope of Payment:

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.

Mobilization will be measured for payment as a lump sum, a single complete unit or work.

Payment for mobilization, measured as provided above, will be made at the contract lump sum price, when so called for in the Bid Schedule, which shall be full compensation for supplying and furnishing all materials, facilities and services and performing all the work required. If payment for mobilization is not a separate bid item, then such costs shall be considered incidental.

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

1. Both progress and final pay estimates will be initially processed by the FCDMC's Construction and Operations Division on Tuesdays only, Tuesdays being the only day the Contractor may submit a pay estimate. Each pay estimate must include the required Maricopa County Minority/Women-Owned Business Enterprise Program Participation Report. The final pay estimate shall include a listing of total 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.
2. This project is subject to the retention provisions of ARS 34-221, and of Paragraph 1 above.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 93-08
COLTER CHANNEL DRAINAGE IMPROVEMENTS

SPECIAL PROVISIONS

SECTION 201 - CLEARING AND GRUBBING

Clearing and grubbing shall conform to Section 201 of the Uniform Standard Specifications except as modified herein. The work consists of removal and disposal of all trees, stumps, and other 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.

No separate payment will be made for clearing and grubbing.

SECTION 202 - MOBILIZATION

202.1 Description:

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 and operations that must be performed and costs incurred prior to beginning work on various items on the project site.

202.2 Measurement:

Mobilization shall be measured for payment by the lump sum as a single complete unit of work.

202.3 Payment:

Payment shall be made at the contract lump sum price for:

ITEM 202 - MOBILIZATION

and shall be full compensation for supplying and furnishing all materials, facilities and services and performing all the work involved as specified herein.

SECTION 206 - STRUCTURE EXCAVATION AND BACKFILL

Structure excavation and backfill shall conform to Section 206 of the Uniform Standard Specifications except as modified herein. The work consists of the removal, placing and compaction of material around the concrete box culverts and headwalls to the lines and grades designated on the plans or as directed by the Engineer.

Structure backfill behind the box culvert and wing walls shall consist of free-draining granular material and shall not contain stones larger than three inches in diameter, with not more than 5 percent passing a #200 sieve and a PI less than 5. Material obtained from project excavations may not be suitable for use in structure backfill construction. Structure backfill shall be placed in horizontal lifts not to exceed six inches in compacted thickness and compacted to a minimum of 95 percent of the maximum density at the optimum moisture content plus or minus 3 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.

This bid item does not include structural backfill quantities for the Dysart Road and El Mirage Road bridges. For the bridges, the cost for structural backfill is incidental to the construction of the bridges.

Measurement: The quantities of structure backfill used will be those of the completed bid item, in place, within the limits of dimensions shown on the plans. The Engineer will compute the quantities of structure backfill by a method which in his opinion is best suited to obtain an accurate determination. This bid item does not include structural backfill quantities for the Dysart Road and El Mirage Road bridges. For the bridges, the cost for structural backfill is incidental to the construction of the bridges.

No separate payment will be made for structure excavation.

Structure backfill shall be paid for at the unit price bid per cubic yard for:
ITEM 206 - STRUCTURE BACKFILL.

SECTION 211 - FILL CONSTRUCTION

Fill construction shall conform to Section 211 of the Uniform Standard Specifications except as modified herein. The work consists of placing and compacting all material wherever necessary according to the construction drawing, beyond the limits of structure backfill, and along the channel.

Unless otherwise specified, material obtained from the project excavations may be presumed suitable for use in fill construction, provided that all organic material, rubbish, debris and other objectionable material is first removed.

Prior to the placement of fill material, all loose soil, vegetation, any roadside debris, pavement, and existing structures within the proposed fill areas shall be completely removed. Depressions and ditches shall be cleaned of all loose or wet soils and widened to accommodate compaction equipment. Sloping surfaces shall be benched to provide a level surface for fill placement. All exposed subgrade surfaces shall be scarified, brought to the proper moisture content and compacted to a maximum depth of eight (8) inches.

The fill shall be compacted in horizontal lifts to a minimum of 95 percent of the maximum density as determined in accordance with ASTM D-2922 and D-3017 within a moisture content range of plus or minus 3 percent of optimum. The depth of the compacted lifts shall not exceed nine (9) inches.

Measurement: The quantities of fill construction used will be those of the completed bid item, in place, within the limits of dimensions shown on the plans. The engineer will compute the quantities of fill construction by a method which in his opinion is best suited to obtain an accurate determination.

Fill construction shall be paid for at the unit price bid per cubic yard for:
ITEM 211 - FILL CONSTRUCTION.

This bid item does not include structure backfill, which is part of Section 206 herein.

SECTION 215 - EARTHWORK FOR OPEN CHANNELS

Earthwork for open channels shall conform to Section 215 of the Uniform Standard Specifications except as modified herein. The work shall consist of excavation of drainage channels as shown on the plans.

The Contractor may dispose of channel excavation material along and/or near the channel alignment, subject to the approval of the adjacent property owners. The following property owners have expressed great interest in receiving the excavation material: UCI Homes, Jim Draper at 894-5400 (Station 9+20 to Dysart Road); Suncor Development, Warren Downs at 935-2700 or Duane Black at 285-6800 (Station 80+00 to El Mirage Road); River Ranch, Jan Kleinman at 252-4861 (El Mirage Road to Station 134+00).

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

ITEM 215 - CHANNEL EXCAVATION.

SECTION 220 - RIPRAP CONSTRUCTION

Plain Riprap

Riprap shall conform to Section 220 of the Uniform Standard Specifications except as modified herein. The work shall consist of placing riprap and grouted riprap for sideweirs and channel lining as shown on the plans. For $D_{50} = 6"$, $D_{min} = 3"$ and $D_{max} = 12"$. For $D_{50} = 4"$, $D_{min} = 2"$ and $D_{max} = 8"$.

All non-grouted riprap shall be underlain with filter fabric meeting the following specifications:

Apparent Opening Size (AOS): U.S. Sieve No. 30-100 ASTM D4751-87

Permittivity: 0.10 sec⁻¹ ASTM D4491-85

Type: Non-woven

PROPERTY	REQUIREMENT	TEST METHOD
Grab tensile strength	140 lbs.	ASTM D4632-86
Grab elongation at break	45% min., 115% max.	ASTM D4632-86
Puncture strength	50 lbs.	ASTM D3787
Brust strength	220 psi	ASTM D3786
Trapezoidal tear	40 lbs.	ASTM D4533-85
Ultraviolet stability	70 %	ASTM D4355-84

The surface to receive the filter fabric shall be free of obstructions, depressions and debris. The filter fabric shall be loosely laid and not placed in a stretched condition. The strips shall be placed to provide a minimum 24 inches of overlap for each joint. On streamwise joints, the upstream strip shall overlap the downstream strip. The fabric shall be protected at all times during construction from extensive exposure to sunlight.

Rock shall be carefully placed on the filter fabric in such a manner as not to damage the fabric. If, in the opinion of the Engineer, the fabric is damaged or displaced to the extent that it cannot function as intended, the contractor shall remove the rock, regrade the area if necessary, and replace the filter fabric.

No separate payment will be made for filter fabric.

Grouted Riprap

Penetration of grout shall be to the full depth of riprap shown on the plans. If penetration of grout is not obtained by gravity flow into the interstices, the grout shall be spaded or rodded to completely fill the voids in the stone layer. The grout shall fill the interstices to within 1 inch of the stone surface.

Grout for riprap shall be colored with a desert beige admixture. The color shall conform to Munsell Color Number 10YR5/3 with respect to hue, value and chroma. A test panel shall be made and the grout color shall be approved by the Engineer prior to use. Cost of grout coloring is incidental to the cost of grouted riprap.

No separate payment will be made for grout.

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

ITEM 220-1 RIPRAP (6-inch D50)

ITEM 220-2 RIPRAP (4-inch D50)

ITEM 220-3 GROUTED RIPRAP

SECTION 225 - WATERING

The cost of watering will be included in the bid item for the construction operation to which such watering is incidental or appurtenant, unless otherwise provided for in the special provisions or proposal.

SECTION 301 - SUBGRADE PREPARATION

The work under this section consists of preparing the subgrade for the pavements on the approach roads and detour road, including ditches if indicated, in accordance with the plans and Section 301. It also includes the tapered portions of the project and driveway turnouts. Shoulders shall be rolled and compacted to a minimum of 90 percent Proctor density.

Direct payment will not be made for excavation, drainage excavation, structure excavation, fill material, waste, haul, overhaul, clearing, rolling or for the disposal of waste materials as this applies to the bridge at El Mirage and Dysart.

The earthwork quantities shown on the plans are approximate and were determined during the design process. They are included to aid the bidder in formulating his bid.

Payment for subgrade preparation shall be made on the basis of price per square yard bid for:

ITEM 301 - SUBGRADE PREPARATION.

SECTION 310 - UNTREATED BASE

Untreated base shall conform to Section 310 of the Uniform Standard Specifications and MCDOT Supplement except as modified herein. The work consists of placing the aggregate base course for the maintenance access roads, the ABC Sand and Gravel access road and reconstruction of Dysart and El Mirage Roads as shown on the plans.

Payment for untreated base shall be made on the basis of the price per ton bid for:

ITEM 310-1 AGGREGATE BASE (Reconstruction Dysart and El Mirage Roads)

ITEM 310-2 AGGREGATE BASE (Access Roads).

SECTION 315 - BITUMINOUS BOND COAT:

The bituminous material shall be Grade MC-70 or MC-250 liquid asphalt as determined by the Engineer. Prime coat shall be applied to the total width of the aggregate base material at the rate of 0.40 gallons per square yard unless otherwise specified by the Engineer. Prime coat shall be allowed to penetrate for not less than 48 hours prior to beginning asphalt concrete paving.

Payment for bituminous bond coat shall be made on the basis of price per ton bid for:
ITEM 315 - BITUMINOUS PRIME COAT.

SECTION 321 - ASPHALTIC CONCRETE

The bituminous material to be used shall be AC-40 complying with Table 711-1.

The mineral aggregate shall meet the grading requirements for Mix Designation C-3/4 in accordance with Section 710.

In addition to pugmill type mixing plants, drum dryer mixers will be allowed in accordance with Standard Specification 710.9. The moisture content of the bituminous mixture immediately behind the paver shall not exceed three percent (3%).

The proper proportioning of the material at the cold feed shall be determined by the Contractor and approved by the Engineer prior to production of asphaltic concrete. Production shall not commence until calibration tests indicate an acceptable product can be obtained.

The correct proportions of each aggregate size introduced into the mixer shall be drawn from the storage bins by an approved type of continuous feeder which shall supply the correct amount of aggregate in proportion to the bituminous material and shall be so arranged that the proportion of each aggregate size can be separately adjusted. The continuous feeder for the aggregate may be mechanically or electrically activated.

The plant shall be equipped with a sampling device to take representative composite samples of the cold feed. If tests indicate non-compliance with specifications, operation shall cease until proper corrections have been made.

The production of the plant shall be governed by the rate required to obtain a thorough and uniform mixture of materials. Mixing shall continue until the uniformity of coating, when tested in accordance with AASHTO T-195, is at least 95 percent.

The Contractor will be required to furnish to the Engineer certified weight tickets covering all of the asphalt concrete place on the project.

Where the compacted thickness of the asphaltic pavement course is designated as three inches (3") or less, the asphalt may be placed in one lift.

Payment for asphaltic concrete shall be made on the basis of price per ton bid for:
ITEM 321 - ASPHALTIC CONCRETE (C-3/4).

SECTION 329 - TACK COAT

Payment for the emulsified bituminous tack coat will be by the ton, diluted for:
ITEM 329 - BITUMINOUS TACK COAT.

SECTION 334 - PRESERVATIVE SEAL

The bituminous material shall be Grade SS-1h, diluted 50 percent with water and shall be applied at the rate of 0.08 gallons per square, unless otherwise directed by the Engineer.

Sand blotter shall be applied to the treated surface at a rate of two (2) pounds per square yard as directed by the Engineer.

Payment for preservative seal shall be made on the basis of price per ton bid for:
ITEM 334-1 PRESERVATIVE SEAL.

Payment for sand blotter shall be made on the basis of price per ton bid for:
ITEM 334-2 SAND BLOTTER.

SECTION 340 CONCRETE CURB, GUTTER, SIDEWALK, DRIVEWAY AND ALLEY ENTRANCE

Payment for concrete sidewalk shall be made on the basis of price per square foot bid for:
ITEM 340-1 CONCRETE WALKS.

Payment for embankment spillway shall be made on the basis of price per each bid for:
ITEM 340-2 EMBANKMENT SPILLWAY.

SECTION 350 - REMOVAL OF EXISTING IMPROVEMENTS

Removal of existing improvements shall conform to Section 350 of the Uniform Standard Specifications except as modified herein. The work includes the removal and disposal of existing structures, pavement, and any other obstacle to construction, unless it is specifically called out on the plans to be removed and relocated. Holes, cavities and trenches resulting from the removal of structures shall be backfilled in accordance with Sections 206 and 211.

The disposal of all waste material removed under this item shall be the responsibility of the Contractor. The disposal site shall be approved by the Engineer.

If a Maricopa County landfill is selected for disposition of waste materials and/or debris, a Maricopa County Landfill Use Permit will be required. Application for permit can be made at the Maricopa County Landfill Office, located at 3325 West Durango Street, Phoenix, Arizona 85009 (Telephone 269-2661). Charges will be levied on a volume basis for each load delivered to the landfill in accordance with the current fee schedule.

The project construction limits shall be cleared of all trash and construction debris. Such material as collected shall be disposed of at an approved landfill site and shall be subject to landfill fees so assessed, which will be included in the unit price bid for this item.

The project construction limits shall be cleared of all discarded tires. These tires shall be collected, hauled to and disposed of at an approved disposal site and shall be subject to disposal fees so assessed, which will be included in the unit price bid for this item.

Weigh tickets from all landfill disposal must be furnished to the Engineer.

Payment for the removal of existing improvements shall be made lump sum for the total job for:
ITEM 350-1 MISCELLANEOUS REMOVALS.
ITEM 350-2 REMOVAL OF EXISTING IMPROVEMENTS (for Road and Bridge Construction)

Payment for removal and disposal of trash and construction debris shall be made on the basis of the price per ton bid for:
ITEM 350-3 REMOVAL AND DISPOSAL OF TRASH.

Payment for removal and disposal of discarded tires shall be made on the basis of the price per ton bid for:
ITEM 350-4 REMOVAL AND DISPOSAL OF DISCARDED TIRES.

SECTION 401 - TRAFFIC CONTROL

Traffic control shall conform with these Special Provisions, Part VI of the Manual on Uniform Traffic Control Devices for Streets and Highways, MUTCD, (US DOT Federal Highway Administration) with current revisions, the City of Phoenix Traffic Manual, and/or as directed by the MCDOT Traffic Engineer or his representative.

It shall be the Contractor's responsibility to provide, erect and maintain all necessary signs, barricades, striping, striping removal, barriers, berms, lights, delineators, uniformed officers, flag men and any other necessary devices to properly mark and control the construction areas. The Contractor has the responsibility for protecting the work, the workmen and the traveling public at all times.

A road closure of Dysart Road is not authorized and two (2) lanes of traffic shall be maintained open at all times. Contractor shall construct the detour road as shown in the plan set. When completed, the Contractor shall stripe and move all traffic onto the detour. See Figure 6-2 in the MUTCD.

A road closure of El Mirage Road for a period not to exceed twelve (12) weeks is authorized. Two weeks prior to closure, the Contractor shall place advisory signs with road closure information including closure date and the expected duration of closure. These signs shall be placed at the first north and south major intersection from the bridge construction site.

Construction traffic lanes shall be a minimum of twelve feet (12) in width and have a safe operating speed of twenty-five (25) miles per hour. Warning signs shall use appropriate distance placards. Local access to residences shall be maintained at all times. No paint striping shall be used on existing pavement, and striping tape properly installed shall be used.

All advance warning construction signs shall be mounted on channels driven into the ground. Each mile and 1/2 mile point of the project shall be signed with construction and speed limit signs mounted on channels driven into the ground and placed in locations where they will not be removed by construction.

The final striping and signing of the road shall be done by MCDOT, and shall not be commenced or installed until all shoulders have been dressed to cover the edge of pavement drop off. The Contractor will give MCDOT a minimum of two (2) weeks notice as to when the signing and striping can be done.

Prior to any excavation or construction, the Contractor shall install and maintain deceleration washed sand berms (approximately five feet [5'] high) on each approach of traffic to the bridge construction site. Sand berms shall remain until the road is open to traffic.

At the time of the pre-construction conference, the Contractor shall submit for review and approval traffic control plans for Dysart Road and El Mirage Road detailing the necessary construction signing and safety measures.

The Contractor shall provide and maintain all necessary signs, barricades and centerline vertical panels for five (5) working days beyond any construction concrete cure time or acceptance of the project by the County, whichever is greater.

Payment for traffic control, including all mobilization, placing, storing, removal and maintenance incidental to the approved traffic control plan, shall be made on a lump sum basis for:

ITEM 401-1 - TRAFFIC CONTROL AND DETOUR

Payment for the Airline Canal and maintenance road detour, includes construction of a temporary channel for the canal and a detour of the west maintenance road according to the plans, shall be made on a lump sum basis for:

ITEM 401-2 - AIRLINE CANAL AND MAINTENANCE ROAD DETOUR

SECTION 405 - MONUMENTS

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

ITEM 405 - SURVEY MONUMENTS (MAG 120-2, TYPE D).

SECTION 420 - CHAIN LINK FENCE

The work under this section consists of construction chain link fence on the bridge decks in accordance with the plans and Section 420.

Payment for chain link fence shall be made on the basis of price per linear foot bid for:

ITEM 420 - CHAIN LINK FENCE.

SECTION 421 - WIRE FENCE AND GATES

421.1 Description:

The work under this section shall consist of furnishing all materials and constructing wire fence and gates at the locations and in accordance with the details shown on the plans. Fences and gates shall be of the types and sizes shown on the plans and shall be constructed in accordance with the requirements of these specifications.

421.2 Materials:

Fencing wire shall be 12-1/2 gauge steel wire and shall be either zinc-coated or aluminum coated. Zinc-coated steel wire shall conform to the requirements of ASTM A 121, Class 1 coating. Aluminum-coated steel wire shall conform to the requirements of ASTM A 585, Type I, Class 1 coating.

Posts, rails, braces and bars shall conform to Section 772.2, Type A.

Portland cement concrete shall conform to the requirements of Section 725.

421.3 Construction:

The contractor shall clear the fence lines of all earth, trees, brush and other obstructions which interfere with the proper construction of the fences, unless the Engineer orders certain trees to remain in place. Clearing the fence line shall be along and within the project right-of-way. Disposal of removed material shall be in accordance with the requirements of Section 201.

Fence shall be constructed along and up to twelve inches (12") within the project right-of-way as shown on the plans.

Fence posts shall be spaced at the intervals and set to the depths shown on the plans.

In determining the post spacing, measurements shall be made parallel to the ground slope, and all posts shall be placed in a vertical position, except in unusual locations where the Engineer may direct that the posts be set perpendicular to the ground surface.

Line posts may be driven into undisturbed earth provided driving does not injure the posts. All voids around the post shall be backfilled and the material thoroughly tamped.

End, corner, pull, latch and gate posts and braces shall be set in concrete footings and crowned at the top to shed water.

Any high points which interfere with the placing of fence wire shall be excavated to provide the clearance shown on the plans.

Changes in the horizontal alignment of the fence line where the angle of deflection is 15 degrees or more shall be considered as corners and a corner post assembly shall be installed. Changes in fence alignment where the angle of deflection is less than 15 degrees but more than five degrees shall be considered as alignment angles and diagonal tension wires shall be installed. The diagonal tension wires shall consist of two twisted steel wires and shall be attached to the adjacent posts.

Where the fence line intersects a cross fence, the wires of the existing cross fence shall connect to an end post assembly as shown on the plans. Connecting fence assemblies with braces for every direction of strain shall be placed at the junction with new fences.

Intermediate post assemblies shall be installed at not more than 500-foot intervals between other braced posts. After post assemblies have been placed, the wire shall be pulled taut to the satisfaction of the Engineer, and each longitudinal wire shall be cut and securely fastened to the braced post with devices suited for the purpose. Wire shall not be carried past a post assembly, but shall be cut and fastened to the post independently of the adjacent spans. A maximum of two splices on wire will be permitted between post assemblies, but not on the same wire. No splice shall be placed closer than 100 feet to any post assembly.

Where fence lines are interrupted by openings for gates, intermediate post assemblies shall be installed at both sides of the opening at a distance of one panel width from the end of the opening.

After the tensioning of the wire between the post assemblies, all longitudinal wires shall be attached to each intervening line post at the height and spacing as shown on the plans. The distance from the bottom wire to the ground may vary at any one point from that shown on the plans four inches plus or minus. Where abrupt changes occur in the fence line grade, intermediate line posts may be required to maintain proper distances between the bottom wire and the ground.

Spacing of the twisted vertical wire stays shall be as shown on the plans for each type of fence. The vertical wire stays shall be woven into every horizontal wire.

At all grade depressions where stresses tend to pull the posts from the ground, the affected fence posts shall be anchored in concrete or the fence wires shall be weighted with concrete sag weights. The volume of concrete required to anchor the posts shall be not less than one cubic foot. Fence sag weights shall weigh not less than 100 pounds and shall be made with a wire loop hanger embedded in the concrete. A double strand of wire shall be attached to each horizontal line of wire and tied to the wire loop hanger of the sag weight.

421.4 Measurement:

Wire fence shall be measured on the fence line along the top of the completed fence from center of end posts, deducting the widths of gates and openings.

421.5 Payment:

Payment shall be made at the contract price bid per lineal foot for:

ITEM 421-1 - WIRE FENCE.

and shall be full compensation for furnishing and installing the wire fence as specified, including removal of obstructions and all incidental costs not specifically covered in other items.

Payment for gates shall be made at the contract price bid per each for:

ITEM 421-2 - FENCE GATE (14 foot).

and shall be full compensation for furnishing and installing the gate as specified, including all incidental costs not specifically covered in other items.

SECTION 502 - DRILLED SHAFTS

The work under this section consists of drilling the holes for the cast-in-place concrete shafts in accordance with the plans and the applicable provisions of Section 501.

After reaching the desired pile tip elevation, the hole shall be carefully machine cleaned to remove all loose disturbed soil from the bottom of the hole. All holes shall be inspected and approved by the Engineer before concrete is placed.

The maximum deviation of the shaft from plumb shall not be more than one percent (1%), and the maximum variation of the center axis of any shaft at the top shall be three inches (3") from its plan location.

For construction of the Dysart Road bridge, should Contractor determine the need for a shoofly of the overhead APS power lines (see Subsection 105.6), the cost of the shoofly will be incidental to the construction of the 30-inch drilled shafts.

For construction of the El Mirage Road bridge, should the Contractor determine the need for an outage of the overhead APS power lines (see Subsection 105.6), the cost of the outage will be incidental to the construction of the 30-inch drilled shafts.

Concrete and reinforcing steel shall be paid for under Section 505 - Concrete Structures.

Drilled shafts shall be measured according to the diameter of drill shaft specified, and the linear feet of drill shaft required.

Payment for drilled shafts shall be made at the unit price bid per linear foot for:

ITEM 502-1 DRILLED SHAFTS (30 inch)

ITEM 502-2 DRILLED SHAFTS (24 inch)

SECTION 505 - CONCRETE STRUCTURES

The work under this section shall consist of furnishing all labor, materials and equipment for the construction of all cast-in-place and other concrete, including the bridge structures and approach slabs, channel drop structures, side wires, flume piers, box culvert and wingwalls, and culvert headwalls in accordance with the plans and Section 505 of the Uniform Standard Specifications, except as modified herein.

No vehicular loads will be permitted on the bridges and approach slabs, and box culvert structure before the period of twenty-one (21) days from the date of the last pour of concrete unless approval is obtained in writing from the Engineer. In no case shall traffic be allowed on the structure until the specified concrete strength has been attained. The Contractor shall take special precautions to keep the area properly barricaded, lighted and marked to prevent automotive traffic from crossing the new bridges and box culvert structures prior to the Engineer's approval.

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

Class "AA" Concrete, $f'c = 4,000$ psi, shall be used for the Dysart Road and El Mirage Road bridges, all drilled shafts, and flume piers.

Class "A" Concrete, $f'c = 3,000$ psi, shall be used for the Airline canal box culvert and wingwalls, culvert headwalls, and at specified locations on the Dysart Road and El Mirage Road bridges.

Class "B" Concrete, $f'c = 2,500$ psi, shall be used for the channel lining at Dysart Road and El Mirage Road bridges.

Class "B" Concrete with fiber reinforcing, $f'c = 2,500$ psi, shall be used for the channel drop structures, and side weirs.

The reinforcing steel shall conform to Section 727 (Grade 60) of the MAG Uniform Standard Specifications.

The use of fly ash will be permitted in all concrete mixes, subject to approval of mix design by Engineer.

Concrete for channel lining, headwalls and aprons, side weirs and drop structures west of El Mirage Road shall be colored with a desert beige admixture. The color shall conform to Munsell Color Number 10YR5/3 with respect to hue, value and chroma. A test panel shall be made and the concrete color shall be approved by the Engineer prior to use. Cost of coloring is incidental to the the cost of concrete.

Fiber Reinforced Concrete: This work consists of furnishing all materials, labor, equipment and services necessary to install fibrous concrete reinforcing for Class "B" concrete.

Fiber reinforced concrete 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 manufactures specifications.

Transit Concrete mixers used on the project must carry current certification from ADOT or Arizona Rock Products Association.

No separate payment will be made for fibrous cement reinforcing.

Payment for flume piers shall be made per lineal foot.

Payment for concrete shall be made at the unit price bid per cubic yard for:
ITEM 505-1 CLASS "AA" CONCRETE, and
ITEM 505-2 CLASS "A" CONCRETE.

Payment for steel shall be made at the unit price bid per pound for:
ITEM 505-3 REINFORCING STEEL.

Payment for concrete shall be made at the unit price bid per cubic yard for:
ITEM 505-4 CLASS "B" CONCRETE, and
ITEM 505-5 CLASS "B" CONCRETE (WITH FIBER REINFORCEMENT).

Payment for concrete structures shall be made at the unit price bid per each for:
ITEM 505-6 CATCH BASIN (MAG 537, TYPE G),
ITEM 505-7 SIPHON HEADGATE HEADWALL,
and shall include furnishing and installing a Swanson 800 Series headgate or approved equal, complete in place, as shown on the plans and specified herein.
ITEM 505-8 HEADWALL (MAG 501, TYPE U)
ITEM 505-9 HEADWALL (MAG 501-3, MODIFIED)
and shall include furnishing and installing trashracks (MAG 502-2) at the inlet headwall, complete in place, as shown on the plans and specified herein.
ITEM 505-10 SIPHON HEADWALL (MAG 502-1)
and shall include furnishing and installing trashracks complete in place, as shown on the plans and specified herein.
ITEM 505-11 SIPHON MANHOLE
and shall include furnishing and installing manhole base with pressure cover and frame, 3-inch PVC tap, valve and cap, and manhole shaft (MAG 522) with cover and frame, complete in place, as shown on the plans and specified herein.
ITEM 505-12 EIGHT-PIPE HEADWALL
and shall include the outlet headwall, complete in place, as shown on the plans and specified herein.

SECTION 515 - STEEL STRUCTURES

Steel structures installation shall conform to Section 515 of the Uniform Standard Specifications except as modified herein. The work consists of placing steel pipe for a flume crossing at the location shown on the plans.

Pipe shall be ASTM Specification A53 Grade B Extra Strong.

Pipe sections shall be welded to form a continuous pipe length.

Pipe welder will be certified.

Pipe and pile foundation above the elevation of the channel bottom shall be painted in accordance with section 515.5. The final paint for the pipe shall be applied after erection of the pipe on the piling. The paint color shall be OSHA orange.

Payment for steel pipe shall be made at the unit price per linear foot bid for:

ITEM 515 - STEEL FLUME PIPE (12 inch),

and shall be full compensation for furnishing and installing the steel flume pipe with assembly to piers as specified, including removal of existing concrete pipe, excavation, backfilling, compacting, welding, testing, and all incidental costs not specifically covered in other items.

SECTION 520 - STEEL AND ALUMINUM HANDRAILS

Steel handrail construction shall conform to Section 520 of the Uniform Standard Specifications except as modified herein. Work shall consist of steel handrails on the Airline Canal box culvert and steel channel barriers at locations shown on the project plans.

Portland cement concrete for channel barrier posts shall conform to the requirements of Section 725.

Payment for channel barriers shall be made at the unit price per linear foot bid for:

ITEM 520-1 - BARRICADE

including full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in constructing the barricade, complete in place, as shown on the plans and specified herein.

Payment for handrails shall be made at the unit price per linear foot bid for:

ITEM 520-2 - STEEL HANDRAIL

and shall be full compensation for furnishing and installing steel handrail as specified at locations on the Airline Canal box culvert, including all labor, materials, tools and equipment, and doing all work involved in constructing steel handrail, complete in place, as shown on the plans and specified herein.

SECTION 610 - WATER LINE CONSTRUCTION

SECTION 611- DISINFECTING WATER MAINS

Work shall consist of relocation and disinfection of the Tierra Buena water line at the location shown on the project plans.

The Contractor shall coordinate with the water company representative, Mr. Bob Prince, prior to interruption of the existing water line. Coordination with the water company will also be required prior to the pressure testing and disinfecting of the water line so that the water company representative may have the opportunity to be present for these activities.

Water line construction shall conform to Section 610 of the Uniform Standard Specifications except as modified herein. Disinfection of the water line shall conform to Section 611 of the Uniform Standard Specifications.

No separate payment shall be made for disinfecting the water line or for pressure testing.

Payment for the water line relocation shall be made at the unit price bid per linear foot for:

ITEM 610-1 - WATERLINE RELOCATION (6 inch),

including full compensation for furnishing all labor, pipe, concrete trust blocks, and doing all work involved in constructing the waterline relocation complete in place, as shown on the plans and specified herein.

Payment for the water valves shall be made at the unit price bid per each for:

ITEM 610-2 - WATERLINE VALVES

including full compensation for furnishing all labor, valves, materials, tools and equipment, and doing all work involved in constructing the waterline valves complete in place, as shown on the plans and specified herein.

ITEM 610-3 - AIR/VACUUM RELEASE VALVE

including full compensation for furnishing all labor, valves, materials, tools and equipment, and doing all work involved in constructing the waterline valves complete in place, as shown on the plans and specified herein.

SECTION 615 - SEWER LINE CONSTRUCTION

Siphon construction shall conform to Section 615 of the Uniform Standard Specifications except as modified herein.

Vitrified clay pipe shall conform to Section 743. Pipe shall be bell and spigot pipe with flexible compression type joints.

The headgate for the siphon structure shall be a Swanson 800 Series or approved equal.

The siphon shall be tested in accordance with 615.10(B) - Hydrostatic Test.

Measurement of siphon pipe will be the number of linear feet of pipe measured along the pipe from the siphon inlet to outlet.

Payment for the siphon pipe construction shall be made at the unit price bid per linear foot for:

ITEM 615-1 VCP SIPHON (8 inch Cleanout),

and shall be in full compensation for furnishing and installing the pipe and fittings complete in place, as specified, including excavation, removal of obstructions, backfilling, water settling, compaction, sheeting and bracing, testing, and all incidental work not specifically covered in other pay items.

ITEM 615-2 VCP SIPHON (15 inch),

and shall be in full compensation for furnishing and installing the pipe and fittings complete in place, as specified, including excavation, removal of obstructions, backfilling, water settling, compaction, sheeting and bracing, testing, and all incidental work not specifically covered in other pay items.

ITEM 615-3 VCP SIPHON (21 inch),

and shall be in full compensation for furnishing and installing the pipe and fittings complete in place, as specified, including excavation, removal of obstructions, backfilling, water settling, compaction, sheeting and bracing, testing, and all incidental work not specifically covered in other pay items.

SECTION 618 - STORM DRAIN CONSTRUCTION

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

Storm drain pipe shall consist of reinforced concrete pipe of the size and at location shown on the project plans.

Payment for storm drain construction shall be made at the unit price bid per linear foot for:

ITEM 618-1 REINFORCED CONCRETE PIPE (18 inch)

ITEM 618-2 REINFORCED CONCRETE PIPE (24 inch)

ITEM 618-3 REINFORCED CONCRETE PIPE (36 inch)

ITEM 618-4 REINFORCED CONCRETE PIPE (42 inch)

and shall be in full compensation for furnishing and installing the pipe and fittings complete in place, as specified, including excavation, removal of obstructions, backfilling, water settling, compaction, sheeting and bracing, testing, and all incidental work not specifically covered in other pay items.

SECTION 621 - CORRUGATED METAL PIPE

Corrugated metal pipe installation shall conform to Section 621 of the Uniform Standard Specifications except as modified herein.

Corrugated metal pipe shall be plain galvanized conforming to the requirements Section 760.

Payment for corrugated metal pipe shall be made at the unit price bid per linear foot to the nearest foot for:

ITEM 621-1 - CORRUGATED METAL PIPE (36 inch)

ITEM 621-2 - CORRUGATED METAL PIPE (21x15 inch ARCH)

ITEM 621-3 - CORRUGATED METAL PIPE (24x35 inch ARCH)

Payment shall be full compensation for furnishing and installing the corrugated metal pipe as specified, including removal of obstructions, excavation, backfilling, compacting, testing, and all incidental costs not specifically covered in other items.

Payment for flap gates shall be made at the unit price bid per each for:

ITEM 621-4 - FLAP GATES (36-INCH)

Payment shall be full compensation for furnishing and installing flap gates (Waterman Model F-10 or approved equal) at the location shown on the plans.

SECTION 635 - CONCRETE-LINED IRRIGATION DITCH

The work under this section consists of construction cast-in-place concrete-lined irrigation ditch as indicated on the plans and in accordance with the applicable provisions of Section 505.

Subgrade for the ditch shall be shaped and compacted in accordance with Section 301, except that the depth of compaction shall be twelve inches (12") below the flow line of the completed ditch.

Concrete shall be Class B, with air entraining agent, and shall be cured by use of a white pigmented sealing compound. The finished surface of the concrete shall be free from rock pockets or surface voids and shall be comparable to the finish obtained by use of a long-handled steel trowel.

Transverse grooves 5/16 inch in width and 5/8 inch in depth shall be made in the concrete lining at intervals of ten feet (10') and maintained to the required dimensions until the concrete has hardened.

Payment for concrete-lined irrigation ditch shall be made for the size on the plans, complete-in-place at the unit price bid per linear foot for:

ITEM 635 - CONCRETE-LINED DITCH

SECTION 710.7 - BATCH MIXING

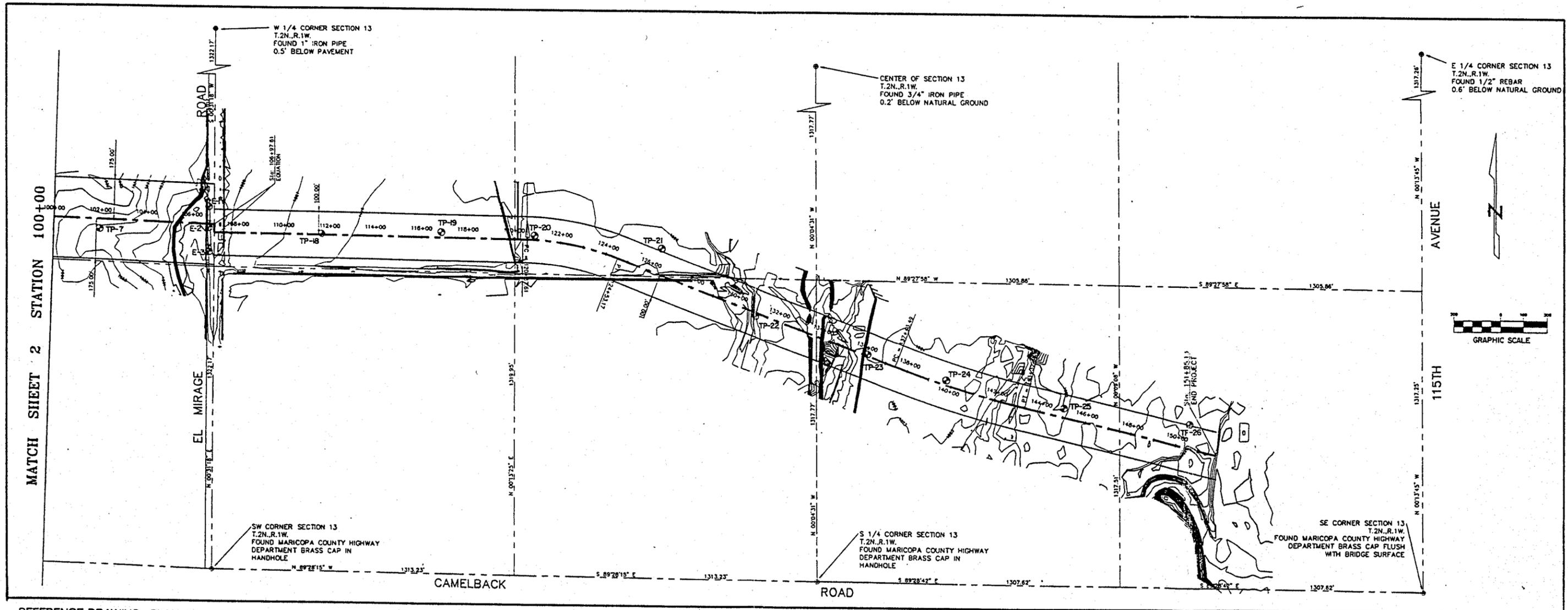
Add the following paragraph to Subsection 710.7.5 - Mixing:

If the results obtained indicate that uniform proportions of the aggregate from the bins or uniform and correct amounts of asphalt are not being delivered, the Engineer shall order that operations cease until proper corrections have been made.

APPENDIX "A"

SOILS BORINGS FOR BRIDGES AND CULVERT

PAGES 1 THROUGH 12



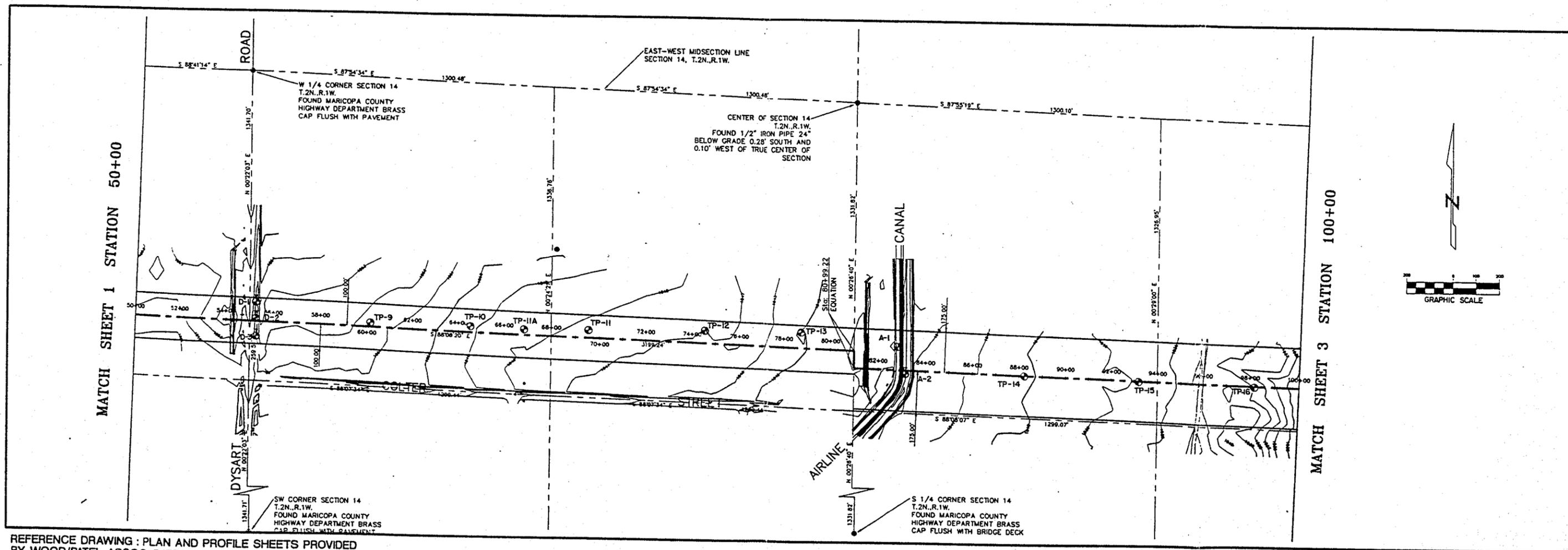
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 BY WOOD/PATEL ASSOC. DATED : 10/92 SHEET 3/3

APPENDIX "A"
 PAGE 1 OF 12

SITE PLAN - SHOWING BORING AND TEST PIT LOCATIONS

Colter Channel Project
 FCD 92-02
 Maricopa County, Arizona
 SHB Job No. E92-186

A-5



REFERENCE DRAWING : PLAN AND PROFILE SHEETS PROVIDED
BY WOOD/PATEL ASSOC. DATED : 10/92 SHEET 2/3

SITE PLAN - SHOWING BORING AND TEST PIT LOCATIONS

APPENDIX "A"
PAGE 2 OF 12

Colter Channel Project
FCD 92-02
Maricopa County, Arizona
SHB Job No. E92-186

A-6

LOG OF TEST BORING NO. A-1

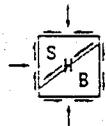
JOB NO. E92-186 DATE 10-13-92

RIG TYPE	<u>CME-55</u>
BORING TYPE	<u>6 5/8" Hollow Stem Auger</u>
SURFACE ELEV.	<u>1043.5'</u>
DATUM	<u>Topo (Wood/Patel)</u>

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0			S 10-6-	8			SM	moist	SILTY SAND, predominantly medium to fine grained, subangular, weakly lime cemented, low plasticity, brown
5			U 27		99	11		moderately firm	
10			S 13-15-	16			SC	moist firm	CLAYEY SAND, considerable silt, trace of gravel, predominantly fine grained, subangular, moderately lime cemented, medium plasticity, light brown
15			U 50		113	11		moist hard	CLAYEY SAND, some to considerable gravel, predominantly medium to fine grained, subangular, moderately to strongly lime cemented, low plasticity, light brown
20			S 50/3"						note: thin lenses of gravel
25			S 48- 50/6"				SM	moist hard	SILTY SAND, trace of gravel, poorly graded, subangular, weakly lime cemented, low plasticity to nonplastic, brown
30			41- S 50/3"						
35									Stopped Auger at 29'6" Sampler refused at 30'3"
40									
45									
50									

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE**
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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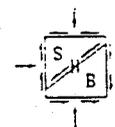
LOG OF TEST BORING NO. A-2

JOB NO. E92-186 DATE 10-13-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				S 14-11-					moist	SANDY CLAY, weakly lime cemented, medium to low plasticity, brown note: weakly to moderately lime cemented at 5'
				11					firm to very firm	
5				S 11-20-			10			
				30						
10				U 16	105	4		SP-SM	moist	SAND, trace of silt, predominantly medium to fine grained, subangular, nonplastic, light brown
									medium dense	
15				S 19-12-					moist	SAND & GRAVEL, trace of silt, poorly graded, subangular, nonplastic, light note: zones of strongly lime cemented materials
				13					medium dense	
20				U 39						
25				S 25-				SM	moist	SILTY SAND, some fine gravel, poorly graded, subangular, moderately lime cemented, nonplastic, brown note: strongly lime cemented below 27'
				50/5"					hard	
30				S 47						
				50/2"						
35										Auger refused at 28' Sampler refused at 28'8"
40										
45										
50										

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE**
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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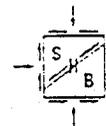
LOG OF TEST BORING NO. D-1

JOB NO. E92-186 DATE 10-15-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	RIG TYPE <u>CME-55</u>	
								REMARKS	VISUAL CLASSIFICATION
0			S 7-7-7				SM	moist	SILTY SAND, predominantly medium to fine grained, subangular, weakly lime cemented, nonplastic, brown
5			S 6-11-13				SC	moderately firm	
10			S 16-22-32					moist firm	CLAYEY SAND, considerable silt & trace of fine grained gravel, poorly graded, subangular, weakly lime cemented, medium plasticity, brown note: moderately lime cemented below 6'6"
15			S 15-22-35				SC	moist hard to very dense	CLAYEY SAND, some to considerable gravel, poorly graded, subangular, weakly lime cemented, medium plasticity, brown note: some stratification due to gravel lenses (GM) & sand, lenses (SP-SM) note: occasional zones of uncemented soils
20			U 70	110	17				
25			S 29-45-50/3"						
30			S 50/1"				GC	slightly moist hard	CLAYEY SAND & GRAVEL, trace of small cobbles, poorly graded, subrounded, moderately lime cemented, low plasticity, brown
35									Auger refused at 29' Sampler refused at 29'1"
40									
45									
50									

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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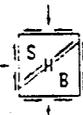
LOG OF TEST BORING NO. D-2

JOB NO. E92-186 DATE 10-15-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	RIG TYPE <u>CME-55</u>	
								REMARKS	VISUAL CLASSIFICATION
0			S 11-9-11				SM	slightly moist	SILTY SAND, trace of fine grained gravel, predominantly medium to fine grained, subangular, weakly lime cemented, nonplastic, brown
5			S 15-16-18				SM-SC	firm	
10			S 8-27-50					slightly moist	SILTY SAND, considerable to some fine grained gravel, some clay, poorly graded, subangular, weakly lime cemented, low plasticity, light brown
15			U 45 113 4				SM	dense to very dense	
20			S 35-50/3"				SC	moist	CLAYEY SAND, considerable silt, some fine grained gravel, poorly graded subangular, weakly to moderately lime cemented, low to medium plasticity, brown
25			S 46-35-38				SM	hard	
30			S 50/3"					moist	SILTY SAND, some gravel, poorly graded, subangular, weakly lime cemented, nonplastic, brown note: trace of coarse grained gravel & small cobbles from 26' to 28'
35			S 50/4"			5	SC	very dense	
40			S 117-29-38					moist	CLAYEY SAND, considerable gravel, poorly graded, subangular, weakly lime cemented, low to medium plasticity, brown note: some moderately to strongly lime cemented zones
45			S 1100/9"		114	6	GP-GC	hard	
50			S 27-50/3"					moist	SAND & GRAVEL, some silt & clay, poorly graded, subrounded, medium plasticity, light brown
								hard	

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
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 - U - 3" O.D. 2.42" I.D. tube sample.
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LOG OF TEST BORING NO. D-2

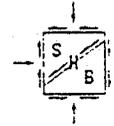
JOB NO. E92-186 DATE 10-15-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
50								GP-GC		
55				S 50/2"				GC	moist hard	CLAYEY SAND & GRAVEL, predominantly fine grained, subrounded, low plasticity, brown
60				S 10-10-14			39	CH	moist firm	SILTY CLAY, some sand, high plasticity, light green
65									Stopped Auger at 59'6" Stopped Sampler at 61'	
70										
75										
80										
85										
90										
95										
100										

RIG TYPE CME-55
 BORING TYPE 6 5/8" Hollow Stem Auger
 SURFACE ELEV. 1051.5'
 DATUM Topo (Wood/Patel)

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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LOG OF TEST BORING NO. D-3

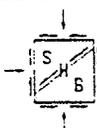
JOB NO. E92-186 DATE 10-14-92

RIG TYPE CME-55
 BORING TYPE 6 5/8" Hollow Stem Auger
 SURFACE ELEV. 1051.0'
 DATUM Topo (Wood/Patel)

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				S 20-18-					slightly moist firm	SILTY SAND, some clay, predominantly medium to fine grained, subangular, weakly lime cemented, low plasticity, light brown
				15				SM-SC		
5				S 7-11-						
				15						
10				S 15-15-					moist medium dense	SANDY GRAVEL, some silt, trace of clay, poorly graded, subangular, weakly lime cemented, low plasticity, light brown
				12				GP-GC		
15				S 36-33-						
				19						
20				S 27-					moist very dense to hard	SILTY SAND, some gravel & clay, predominantly fine to medium grained, subrounded, weakly lime cemented, medium plasticity, light brown
				50/4"				SM-SC		
25				S 30-						
				50/3"						
30				S 28-					moist hard	CLAYEY SAND & GRAVEL, considerable silt, poorly graded, subrounded, moderately lime cemented, low plasticity, brown
				50/2"				GC-GM		
				S 50/3"						
35									Auger refused at 34' Sampler refused at 34'3"	
40										
45										
50										

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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LOG OF TEST BORING NO. E-1

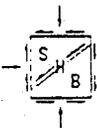
JOB NO. E92-186 DATE 10-14-92

RIG TYPE CME-55
 BORING TYPE 6 5/8" Hollow Stem Auger
 SURFACE ELEV. 1027.0'
 DATUM Topo (Wood/Patel)

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0				S 10-16-					moist	SAND & GRAVEL, some silt, trace of small cobbles, poorly graded, subrounded, weakly lime cemented, nonplastic, brown
				18				SP-SM		
5				S 9-13-						
				11						
10				S 9-17-					moist very firm	CLAYEY SAND, considerable silt & trace of fine grained gravel, predominantly medium to fine, subangular, weakly lime cemented, low plasticity, brown
				20				SC		
15				U 100/5"					slightly moist	SILTY CLAY, some sand, moderately lime cemented, high plasticity, brown
								CH	hard	
20				S 50/2"					moist hard	CLAYEY GRAVEL, considerable silt & sand, trace of small cobbles, poorly graded, subrounded, weakly to moderately lime cemented, low to medium plasticity, brown
								GC		
25				S 43-					slightly moist	SILTY SAND & GRAVEL, some small cobbles, poorly graded, subrounded, weakly lime cemented, nonplastic, light brown
				50/6"				GM	hard to very dense	
30				S 35-46-						
				50/3"						
35				S 19-38-					slightly moist	SAND, trace of silt & fine grained gravel, poorly graded, subangular, nonplastic, light brown
				50/5"				SP	very dense	
40				41-					slightly moist	SILTY SAND, considerable gravel, poorly graded, subangular, weakly lime cemented, nonplastic, brown
				S 50/6"				SM	hard	
45										Stopped Auger at 39'6" Sampler refused at 40'6"
50										

GROUNDWATER		
DEPTH	HOJR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" O.D. thin-walled Shelby tube.



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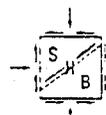
LOG OF TEST BORING NO. E-2

JOB NO. E92-186 DATE 10-13-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	RIG TYPE <u>CME-55</u>			
									REMARKS	VISUAL CLASSIFICATION		
0				S 14-21-						moist very firm	SAND & GRAVEL, considerable fine grained sand & some small cobbles, poorly graded, subrounded, weakly lime cemented, nonplastic, brown	
				23								GM
5				S 12-14-								
				18								
10				S 15-								
				50/5"								
15				S 26-								
				50/6"								
20				U 51	90	13						
25				S 18-20-								
				25								
30				S 16-36-								
				50/5"								
35				S 24-								
				50/4"								
40				S 29-								
				50/4"								
45												
50												

GROUNDWATER		
DEPTH	HOUR	DATE
	none	

- SAMPLE TYPE
- A - Drill cuttings.
 - S - 2" O.D. 1.38" I.D. tube sample.
 - U - 3" O.D. 2.42" I.D. tube sample.
 - T - 3" C.D. thin-walled Shelby tube.



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JOB NO. E92-186 DATE 10-13-92

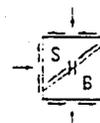
Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	RIG TYPE <u>CME-55</u>	
									REMARKS	VISUAL CLASSIFICATION
50		[Hatched Box]		S 25-50/6"						SAND, continued
55				S 10-15-22				SC-SM		
60				S 10-9-7						
65										Stopped Auger at 59'6" Stopped Sampler at 61'
70										
75										
80										
85										
90										
95										
100										

GROUNDWATER

SAMPLE TYPE

DEPTH	HOUR	DATE
	none	

- A - Drill cuttings.
- S - 2" O.D. 1.38" I.D. tube sample.
- U - 3" O.D. 2.42" I.D. tube sample.
- T - 3" O.D. thin-walled Shelby tube.



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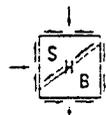
LOG OF TEST BORING NO. E-3

JOB NO. E92-186 DATE 10-14-92

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blow Count	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unfired Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								SM	moist	SILTY SAND, trace of gravel, predominantly medium to fine grained, subangular, weakly lime cemented, nonplastic, brown
			S 9-8-		12				firm	
5								GM	moist	SILTY SAND & GRAVEL, trace of small cobbles, poorly graded, subrounded, weakly lime cemented, nonplastic, brown
			S 8-12-		14				firm to hard	
10										SILTY CLAY, considerable sand, weakly lime cemented, medium plasticity, brown
			S 28-32-		50/4"					
15								CL	moist	
			S 28-33-		35				hard	
20										SILTY SAND, considerable gravel, predominantly fine to medium grained, subangular, low plasticity, light brown
			U 56							
25										SM
			S 14-25-		35					
30									slightly moist	very dense
			S 23-44-		50					
35										Stopped Auger at 39'6" Sampler refused at 40'11"
			U 38							
40										
			S 12-35-		50/5"					
45										
50										

GROUNDWATER		
DEPTH	HOJR	DATE
	none	

SAMPLE TYPE	
A	- Drill cuttings.
S	- 2" O.D. 1.38" I.D. tube sample.
U	- 3" O.D. 2.42" I.D. tube sample.
T	- 3" O.D. thin-walled Shelby tube.



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