

CONSTRUCTION SPECIFICATIONS

FOR

83RD AVENUE BRIDGE OVER SKUNK CREEK

FCD CONTRACT NO. 89-48

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

CONSTRUCTION SPECIAL PROVISIONS

Prepared By:

HOFFMAN-MILLER ENGINEERS, INC.
426 North 44th Street, Suite 160
Phoenix, Arizona 85008



(Engineer's
Seal)

Prepared For:

Flood Control District of Maricopa County
and

Recommended By:

Nick Karan

Nicholas P. Karan, P.E., Chief
Engineering Division

Date:

11-13-89

Approved By:

Stanley L. Smith Jr.
D.E. Sagramoso, P.E.

Chief Engineer and General Manager

STANLEY L. SMITH JR. PE
DEPUTY CHIEF ENGINEER

Date:

11-15-89

SUPPLEMENTARY TO MARICOPA ASSOCIATION OF GOVERNMENTS UNIFORM STANDARD
SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EDITION OF 1979 AND
REVISIONS AND SUPPLEMENTS THERETO

A400.507

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SUPPLEMENTARY TO MARICOPA ASSOCIATION OF GOVERNMENTS UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EDITION OF 1979 AND REVISIONS AND SUPPLEMENTS THERETO.

DATE: November 28, 1989

FCD Contract No. 89-48

Page 1 of 2

To Contract Documents

ENTITLED: 83RD AVENUE BRIDGE OVER SKUNK CREEK
OWNER: Flood Control District of Maricopa County

The above documents are herein modified. The provisions of said documents applicable to these modifications remain unchanged unless specifically indicated otherwise herein. This addendum forms a part of the contract documents and modifies them as follows:

TO INVITATION TO BID AND BIDDING SCHEDULE:

INVITATION TO BID, remove and replace page 3 of 26, PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES.

BIDDING SCHEDULE, remove and replace page 6 of 26. Note specifically Items 212-2 and 215.

TO CONSTRUCTION SPECIAL PROVISIONS:

SECTION 215 - EARTHWORK FOR OPEN CHANNELS: Page SP-23

Change first paragraph on page SP-23 as follows:

"Material excavated under this item may be used for roadway, detour embankment, and channel bank construction, provided that it meets the requirements of SECTION 210 - BORROW EXCAVATION. Material that is determined to be unsuitable for use in roadway, detour embankment, and channel bank construction shall be disposed at the designated spoil areas shown on the plans."

SECTION 502 - CAISSON CONSTRUCTION: Page SP-30

Delete seventh paragraph from top of page SP-30 in its entirety.

SECTION 615 - SEWER LINE CONSTRUCTION: Page SP-40

Change fourth paragraph from top of page SP-40 as follows:

"Before acceptance,... The inspection will be accomplished by the City of Peoria Engineering Department."

SECTION 618 - DRAINAGE PIPE AND STRUCTURE: Page SP-40

Add the following to the end of the first paragraph under this section:

"...respectively, and the plug shall be in accordance with MAG Standard Detail 427."

SECTION 630 - TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES: Page SP-41

Change second paragraph in Section 630, page SP-41 to read as follows:

"The Contractor shall notify the City of Peoria Engineering Department..."

ADDENDUM NO. 1

DATE: November 28, 1989

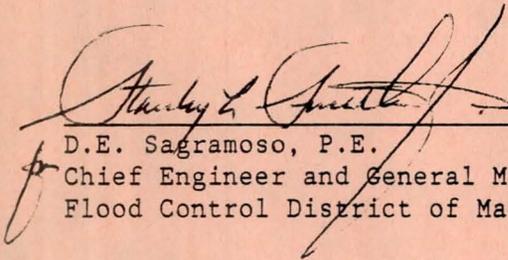
FCD Contract No. 89-48

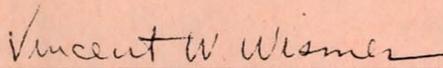
Page 2 of 2

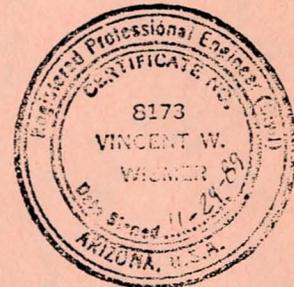
TO CONSTRUCTION DRAWINGS:

Remove sheets 2, 5, 7, 9, and 11 and replace with revised sheets 2, 5, 7, 9, and 11.

Add sheets 41 and 42, designated Spoil Sites.


STANLEY L. SMITH JR., P.E.
DEPUTY CHIEF ENGINEER
D.E. Sagramoso, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County


Vince W. Wismer
Hoffman-Miller Engineers, Inc.



(SEAL)

ATTENTION

ALL PROSPECTIVE BIDDERS

Some of the Bid Bonds previously received with bids for construction projects have not been in complete compliance with Arizona Revised Statutes (A.R.S.).

A.R.S. Sec. 34-201(A)(3) requires that every bid be accompanied by a certified check, cashier's check or surety bond for five percent (5%) of the amount of the bid.

In some cases the bond limit the five percent (5%) to the difference between the low bid and that of the next lowest responsible bidder, to whom a contract could be awarded, in the event that the low bidder failed to enter into contract within the specified time.

Bids received with limitation on the five percent (5%) will be considered as nonresponsive bids and will not be accepted or considered for award of contract.

Please take note and submit your bids accordingly.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT 89-48

83RD AVENUE BRIDGE OVER SKUNK CREEK

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18. Drawings: 83rd Avenue Bridge at Skunk Creek, 40 sheets	Separate



(Area to left
reserved for
Engineer's Seal)

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

BID OPENING DATE: December 14, 1989

LOCATION: The project is located in Peoria, Arizona on 83rd Avenue at Skunk Creek, approximately 500 feet south of Greenway Road.

PROPOSED WORK: The work consists of the removal of the existing bridge on 83rd Avenue at Skunk Creek and constructing a new 4-span, continuous, prestressed concrete girder bridge, detour, approach roadway, soil-cement hydraulic drop structures, soil-cement channel lining, sanitary sewer lines and other miscellaneous items of work required for completion of the project.

BIDS:

SEALED BIDS for the proposed work will be received by the Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona 85009 until 2:00 p.m. (Phoenix time) on the above date and then publicly opened and read at 3335 W. Durango St., Phoenix, AZ 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, or national origin.

The bidder shall be required to certify that it is appropriately licensed as a Contractor in the State of Arizona for performing 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.

In order to determine if bidder is entitled to the provisions of A.R.S. Sec. 34-241, all bidders shall submit, as a part of their proposal, an affidavit stating whether or not taxes have been paid for two successive years as provided in A.R.S. Sec. 34-241. The affidavit shall be in the form provided herein.

In the event a bidder challenges compliance with the tax provision, the successful bidder will be required to provide proof of compliance.

CONTRACT TIME:

All work on this Contract is to be completed within Two Hundred Seventy (270) calendar days after date of Notice to Proceed.

MBE/WBE PARTICIPATION:

For this project, a goal of fifteen (15) percent is desired for Minority/Women-Owned Business Enterprises. Instructions and required forms are included in the Minority and Women-Owned Business Enterprise Program Section.

PRE-BID CONFERENCE:

A pre-bid conference will be held on November 28, 1989, 1989 at 10:00 a.m. in the Flood Control District conference room, 3335 W. 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, Contracts 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. Under no circumstances will verbal interpretations or clarifications be given to individual contractors.

PROJECT PLANS, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS:

Plans and Construction Specifications may be obtained from Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona 85009 upon payment of \$35.00 by check, payable to the FLOOD CONTROL DISTRICT of MARICOPA COUNTY. This payment will not be refunded. Mail orders for project documents must include an additional \$7.50 for first class U.S. postage and handling. The total \$42.50 will not be refunded. Regardless of circumstances, we cannot guarantee mail delivery. Each bid must be accompanied by a Bid Bond, cashier's or certified check or postal money Order equal to 5 percent (5%) 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, 3335 West Durango Street, Phoenix, Arizona 85009.

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

PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
27,950	C.Y.	Soil-Cement Bank Protection
590	L.F.	Soil-Cement Drop Structure
117,500	C.Y.	Channel Excavation
900	L.F.	Concrete Caisson (7' Diameter)
573	L.F.	Concrete Caisson (5' Diameter)
1,392	C.Y.	Class "A" Concrete
1,030	C.Y.	Class "AA" Concrete
1	EA.	Catch Basin, MAG Detail 537, Type G Single Grate
486,445	LB.	Reinforcing Steel (Gr. 60)
36	EA.	Precast Prestressed Conc. Beams - Type V (Pretension Alternate)
36	EA.	Precast Prestressed Conc. Beams - Type V (Post-tension Alternate)
1,023	L.F.	Aluminum Handrail

PROPOSAL

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

Gentlemen:

The following Proposal is made for constructing FCD Contract 89-48; 83rd Avenue Bridge Over Skunk Creek 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, Special Provisions, Forms of Contract, and Bond 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, or conditions to be overcome, be pled. On the basis of the Plans, Construction Specifications, Special Provisions, the Forms of Contract, and the Bond 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 Bond 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 270 calendar days from the effective date specified in the Notice to Proceed, and maintain at all times a Contract Bond, approved by the Board of Directors, in an amount equal to one hundred percent of the total bid. 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 Bond 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 five (5) 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 his Proposal, if the Proposal is accepted and there should be failure on the part of the Undersigned to execute the Contract and furnish satisfactory Bond 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 and has included their provisions in the proposal:

Addendum No. _____ Dated _____
Addendum No. _____ Dated _____

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

BIDDING SCHEDULE

PROJECT: 83rd Avenue Crossing Skunk Creek

CONTRACT: FCD 89-48

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
212-1	Soil Cement Bank Protection	27,950	CY			
212-2	Soil Cement Drop Structure	590	LF			
215	Channel Excavation	117,500	CY			
301	Subgrade Preparation	6,523	SY			
310	Aggregate Base Course	1,115	TON			
315	Bitum. Prime Coat	10.5	TON			
321-1	Asphalt Conc. (C-3/4)	1,569	TON			
321-2	Bitum. Tack Coat	1.2	TON			
321-3	Preservative Seal (Contingent Item)	275	GAL			
321-4	Blotter Material (Contingent Item)	2	TON			
340	Curb, Type "A" (MAG Det. 222)	235	LF			
350	Remove Exist. Impr.	1	LS			
401	Traffic Control	1	LS			
405	Survey Marker (MAG Det. 120-1); Type "A"	1	EA			
415-1	Guardrail, W/Beam Single Face	275	LF			

BIDDING SCHEDULE

PROJECT: 83rd Avenue Crossing Skunk Creek

CONTRACT: FCD 89-48

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
415-2	Guardrail, Breakaway Cable Terminus	4	EA			
415-3	Guardrail, Rub Rail	4	EA			
415-4	Guardrail, Rail Anchor Assembly	4	EA			
420-1	Remove & Relocate Barbed Wire Fence	205	LF			
420-2	Barbed Wire Fence	506	LF			
420-3	Fence Gate	3	EA			
502-1	Concrete Caisson (7' Diameter)	900	LF			
502-2	Concrete Caisson (5' Diameter)	573	LF			
505-1	Class "A" Concrete	1,392	CY			
505-2	Class "AA" Concrete	1,030	CY			
505-3	Catch Basin, MAG Detail 537, Type G Single Grate	1	EA			
505-4	Reinforcing Steel (Gr. 60)	486,445	LB			
506-1	Precast Prestressed Conc. Beams - Type V (Pretension Alternate)	36	EA			
506-2	Precast Prestressed Conc. Beams - Type V (Post-Tension Alternate)	36	EA			
520	Aluminum Handrail	1,023	LF			

BIDDING SCHEDULE

PROJECT: 83rd Avenue Crossing Skunk Creek

CONTRACT: FCD 89-48

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
615-1	20" Diameter Ductile Iron Pipe (DIP)	120	LF			
615-2	20" Diameter DIP Encased per MAG Det. 402	320	LF			
615-3	18" Diameter High Density Polyethylene Pipe	424	LF			
618-1	24" Diameter RGRCP	182	LF			
618-2	54" Diameter RGRCP	70	LF			
618-3	Concrete Encased 24" Diameter RGRCP	10	LF			
619	12" Diameter PVC Pipe (Schedule 40)	50	LF			
621	48" Diameter CMP	500	LF			
623	Concrete Headwall for 24" RCP	1	EA			
623-1	Concrete Headwall and Trash Rack for 54" RCP	1	EA			
625	Sanitary Sewer Manhole MAG Det. 422	3	EA			
630-1	Adjust Water Valve MAG Detail 391-1-A	4	EA			
630-2	Adjust Water Valve MAG Detail 391-1&2-B	1	EA			
630-3	Relocate Fire Hydrant	1	EA			

TOTAL BID AMOUNT: _____

IF BY AN INDIVIDUAL:

(NAME - TITLE) (ADDRESS)
DATE _____
(PHONE)

IF BY A FIRM OR PARTNERSHIP:

(FIRM NAME) (FIRM ADDRESS)
BY: _____ DATE _____
(NAME - TITLE) (PHONE)

** 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: _____ DATE: _____
(PHONE)

TITLE: _____

* Incorporated under the Laws of _____

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.

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 ___ percent (___%) 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 A.R.S. Sec. 34-201(A)(3).

WHEREAS, the said Principal is herewith submitting its proposal for FCD Contract 89-48; 83rd Avenue Over Skunk Creek in the County of Maricopa, State of Arizona.

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 such proposal and give such Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter into such contract and give such Bond and Certificates of Insurance, if the Principal shall pay to the Flood Control District of Maricopa County the sum of money set forth above as liquidated damages for failure of the Principal to enter into the contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, A.D., 1989.

Principal

Title

Witness:

Surety

Title

Witness:

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

- 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 which is located in the Maricopa County Highway Department building, 3325 West Durango Street, Phoenix. In addition, only those firms certified at least seven calendar days 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 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. Any MBE/WBE Wholesaler, Distributor, or Jobber that does not manufacture or substantially alter the materials or product it sells will be limited to 20 percent of the sale price when determining the percentage of MBE/WBE participation.

B. Required forms:

An affidavit is included as part of this section. The form must be completed within seven calendar days after the Notice of Award of Contract. The low bidder is required to submit a Minority/Women-Owned Business Enterprise Program MBE/WBE Participation Affidavit listing the MBE/WBE participation by MBE/WBE firm and the related dollar value of the MBE/WBE contract.

C. Requests for Pay:

Each Request for Pay must be accompanied by a Maricopa County Minority/Women-Owned Business Enterprise Program MBE/WBE Participation Report. The final pay request shall include a listing of total contract MBE/WBE participation.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
MINORITY/WOMEN-OWNED BUSINESS ENTERPRISE PROGRAM

MBE/WBE PARTICIPATION ASSURANCES
AFFIDAVIT

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.
- _____ Will not participate in the MBE/WBE Program.

The bidder will specify its MBE/WBE participation on the Intended Participation Affidavit or provide documentation of its good faith efforts not later than 4:00 p.m., the seventh calendar day following the bid opening. The required affidavit shall be obtained by the apparent first and second low bidders from the Minority Business Office, Maricopa County Highway Department Building, 3325 West Durango Street, Phoenix, Arizona 85009, following the opening and reading of bids; a sample affidavit form for reference purposes follows.

Name of Firm

Signature

Title

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
MINORITY-OWNED BUSINESS ENTERPRISE PROGRAM

MBE/WBE PARTICIPATION AFFIDAVIT
(To be submitted within seven calendar days of Notice of Award)

Flood Control District of Maricopa County Contract No. FCD 89-48

1. Intended Minority/Women-Owned Business Enterprise Participation (attach additional papers, if necessary.)

Name of Firm	Principal	Address	Item Number(s) or Work Description	Dollar Value of Subcontract
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

MBE/WBE Contract Goal _____ Total Dollar Value of Proposed Subcontract(s) _____
Contract Bid Total _____
Percent of Contract Bid to be Subcontracted _____

2. Substitution

I understand that if a Maricopa County certified MBE/WBE (sub)contractor is unable to perform for any part of the intended work, my company should make sufficient efforts to (sub)contract either the same, or other work to an alternative Maricopa County certified MBE/WBE equal to the amount to attain the MBE/WBE goal and that I must document such efforts.

SAMPLE
Name of Firm _____
Signature _____
Title _____

cc: Minority Business Office
Maricopa County Highway Building
3325 West Durango Street
Phoenix, Arizona 85009

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: 83rd Avenue Bridge Over Skunk Creek

Contract Number: 89-48

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, %: 15

Total Cumulative MBE/WBE

Participation on This Contract, %: _____

MBE/WBE subcontract payment made
during this reporting period (yes or no): _____

cc: Minority Business Office
Maricopa County Highway Building
3325 West Durango Street
Phoenix, Arizona 85009

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 1989, 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 89-48; 83rd Avenue Bridge Over Skunk Creek, and furnish at his 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, 3335 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, 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 his 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 his 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. 32-1129.

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

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

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

ARTICLE VIII - MBE/WBE PROGRAM: Flood Control District of Maricopa County will endeavor to ensure in every way possible that minority and women-owned business enterprises shall have every opportunity to participate in providing professional services, purchased goods, and contractual services to the Flood Control District of Maricopa County without being discriminated against on the grounds of race, religion, sex, age, or national origin.

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

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

PARTY OF THE FIRST PART

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PARTY OF THE SECOND PART

BY: _____
Printed Name

BY: _____
CHAIRMAN, BOARD OF DIRECTORS

BY: _____
Signature

DATE: _____

Title
DATE: _____

Tax Identification Number

RECOMMENDED BY:

CHIEF ENGINEER AND GENERAL MANAGER
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

ATTEST:

CLERK OF THE BOARD

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: _____

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 _____, 1989, for _____

_____, 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 him or his subcontractors in the prosecution of the work provided for in said contract, then this 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 or any party which recovers judgement on this bond shall be entitled to such reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this _____ day of _____, 1989.

PRINCIPAL SEAL

BY: _____

AGENCY OF RECORD

SURETY SEAL

BY: _____

AGENCY ADDRESS

POWER OF ATTORNEY 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 _____, 1989, for _____

_____, 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 _____, 1989.

AGENCY OF RECORD

AGENCY ADDRESS

BOND NUMBER

POWER OF ATTORNEY

BY:

PRINCIPAL SEAL

BY:

SURETY SEAL

BY:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CERTIFICATE OF INSURANCE

CONTRACT FCD 89-48

PROJECT TITLE 83rd Avenue Bridge at Skunk Creek

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
	<input checked="" type="checkbox"/> COMPREHENSIVE AUTO LIABILITY & NON-OWNED			SAME AS ABOVE	
	<input checked="" type="checkbox"/> EXCESS LIABILITY			NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	3,000
	<input checked="" type="checkbox"/> WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY			STATUTORY each accident	\$100
	<input type="checkbox"/> OTHER				

OTHER Maricopa County, Hoffman-Millers Engineers, Inc., and the City of Peoria, Arizona shall also be named as Additional Insured and as a Certificate Holder.

Except for 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
 3335 West Durango Street
 Phoenix, Arizona 85009

DATE ISSUED _____

AUTHORIZED REPRESENTATIVE _____

It is further agreed that:

The Contractor hereby agrees to indemnify and save harmless the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, MARICOPA COUNTY, HOFFMAN-MILLER ENGINEERS, INC., and the CITY OF PEORIA, ARIZONA, or any of its 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, Maricopa County, Hoffman-Miller Engineers, Inc., and the City of Peoria, Arizona, 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, Maricopa County, Hoffman-Miller Engineers, Inc., and the City of Peoria, Arizona. The above cost of damages incurred by the Flood Control District of Maricopa County, Maricopa County, Hoffman-Miller Engineers, Inc., and the City of Peoria, Arizona, or any of its departments, agencies, officers or employees shall include in the event of an action, court costs, expenses for litigation and reasonable attorney's fees.

Firm

Date

Principal

Title

SUBCONTRACTOR LISTING

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.

(Signature) _____

**CONSTRUCTION SPECIAL PROVISIONS
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT NO. 89-48
FOR
83rd AVENUE BRIDGE AT SKUNK CREEK**



PROPOSED WORK: The work consists of the removal of the existing bridge on 83rd Avenue at Skunk Creek and constructing a new 4-span, continuous, prestressed concrete girder bridge, detour, approach roadway, soil-cement hydraulic drop structures, soil-cement channel lining, sanitary sewer lines and other miscellaneous items of work required for completion of the project.

LOCATION OF WORK: This project is located in Peoria, Arizona on 83rd Avenue at Skunk Creek, approximately 500 ft. south of Greenway Road.

SPECIFICATIONS: The work embraced herein and as shown on the plans for the construction of this project shall be done in accordance with the Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction dated 1979 and the current revisions thereto, and the Construction Special Provisions contained herein and City of Peoria and Maricopa County Highway Department Supplements to the MAG Uniform Standard Specifications.

PRECEDENCE OF CONTRACT DOCUMENTS: The City of Peoria and Maricopa County Highway Department Supplements to MAG Specifications and Details will govern over the MAG Standard Specifications and Details. In case of a discrepancy or conflict, Project Plans will govern over both the City of Peoria and Maricopa County Highway Department Supplements and MAG Standard Specifications and Details. These Construction Special Provisions will govern over the City of Peoria and Maricopa County Highway Department Supplements and MAG Standard Specifications and Details and the Project Plans.

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).

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 270 (two hundred seventy) days after the date of the Notice to Proceed.

In the event the Contractor elects to schedule overtime, second shifts, weekend work and generally all work as specified in Section 108.5 of these specifications in order to complete the project, the Contractor is reminded that the costs associated with additional testing time, additional test costs, additional inspection, survey, engineering or other work by the construction administration and/or the Flood Control District of Maricopa County shall be borne by the Contractor in accordance with Section 108.5. These costs shall be deducted from the money due to the Contractor by the Flood Control District of Maricopa County. The cost associated with the items above shall be incidental to the unit price of items in the bid schedule.

NEGOTIATION CLAUSE: Recovery of damages related to expenses incurred by the Contractor for a delay for which the Flood Control District of Maricopa County 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 Flood Control District of Maricopa County. This provision shall not be construed to void any provision 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 the requirements of the work by the Contractor at his expense.

PROGRESS SCHEDULE: The Contractor shall submit his proposed work progress schedule to the Engineer for approval before starting the work. Weekly updates to the schedule shall be submitted to the inspector at the weekly coordination meeting.

MATERIAL SOURCES: Concrete, Aggregate Base, 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 his proposed commercial sources prior to use, and shall present certificates stating that the material produced from commercial sources is in accordance with the Uniform Standard Specifications and these Special Provisions.

SUBSECTION 101.2 - DEFINITIONS AND TERMS: Change the definition of Budget Project to read as follows: A project financed by funds set aside in the annual budget or otherwise approved by the Board of Directors of the Flood Control District of Maricopa County.

Change the definition of Engineer to read as follows: The Chief Engineer and General Manager of the Flood Control District of Maricopa County (FCD/MC) acting directly or through his authorized representative.

Change the definition of Owner to read as follows: The Flood Control District of Maricopa County, acting through its legally constituted officials, officers, or employees.

SECTION 102 - ADDENDA & SUBMISSION OF BIDDING SCHEDULE: It shall be the responsibility of prospective bidders to determine, prior to submission of a bid, if any addenda have been issued. This may be accomplished by calling 602-262-1501. Any addendum issued, if not already bound into the Special Provisions, must be included as a part of the Special Provisions, and any quantities on the Bidding Schedule requiring change shall be adjusted by pen and ink to the new figure.

Bids that do not include appropriate addenda and show appropriate changes to the Bidding Schedule shall be invalid.

SECTION 102.4 - EXAMINATION OF SITE: The Contractor shall visit the site and be familiar with the existing conditions and the proposed construction items of special note.

1. During construction of the bridge and soil-cement bank protection, the Contractor shall be responsible for maintaining the wetlands area upstream of the bridge.

SECTION 102.5 - PREPARATION OF PROPOSAL: The bidder's Arizona State Contractor's license number and classifications shall be shown on the proposal. The Contractor shall be appropriately licensed as a Contractor in the State of Arizona for performing the work in this project.

SECTION 103.6 - CONTRACTOR'S INSURANCE: Concurrently with the execution of the contract, the Contractor shall furnish a Certificate of Insurance using the included Certificate or one of equal wording that names the additional insureds as set out in the included Certificate and in 103.6.1 (D) below. The certificate shall also name the additional insureds as Certificate Holders. The types of insurance and the limits of liability shall be as indicated on the included form.

SECTION 103.6.1 (D): Add Hoffman-Miller Engineers, Inc., Maricopa County, City of Peoria, and other entities as mentioned on the included Certificate of Insurance as additional insureds.

SECTION 103.6.2: The Contractor shall also indemnify and hold harmless the Owner, the Consultant, the Owner's Representative, any jurisdiction or agency issuing permits for any work involved in the project, and their consultants, and each of their directors, officers, employees, and agents from and against all losses, expenses, damages (including damages to the work itself), attorneys' fees, and other costs, including costs of defense which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the work and all of the Contractor's obligations under the contract. Such costs, expenses, and damages shall include all costs, including attorneys' fees, incurred by the indemnified parties in any lawsuit to which they are a party.

SECTION 104 - SCOPE OF WORK: 104.2.1 General: 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.

SECTION 104.1.2 - TRAFFIC REGULATIONS:

- A. The following shall be considered major streets:
- 83rd Avenue
- B. All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, latest revision.
- C. Permission to restrict City streets, sidewalks, and alleys (street closure permits) shall be requested as specified in Section III of the Traffic Barricade Manual.
- D. Unless otherwise provided for in SECTION 401, all traffic on this project shall be regulated as specified in Section IV of the Traffic Barricade Manual.

SECTION 104.2 - BORING LOGS AND SOILS REPORT: The soil boring logs are included in the project for the Contractor's information only. 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 104.2.2: Due to Physical Conditions: Paragraph *B). In the first sentence delete the following words: "backfill or bedding"

SUB-SECTION 105.2 - PLANS AND SHOP DRAWINGS: Sub-Section 105.2 of the MAG Standard Specifications is amended to include the following:

The number of copies of plans/shop drawings required for review and/or approval shall be as follows:

Initial submittal: Three (3) copies. One (1) copy will be returned to the Contractor.

Final submittal: Seven (7) copies. Two (2) copies will be returned to the Contractor.

The Contractor shall furnish the Engineer with these copies of shop drawings, pipe layout diagrams, manufacturer's catalog data, and detailed information, in sufficient detail to show completed compliance with all specified requirements, covering, but not limited to, the following items:

- A. Fabricated Pipe and Design Data
- B. Precast Manhole Risers
- C. Reinforcing Steel
- D. Castings
- E. Field Closures
- F. Concrete Mix Designs
- G. Reinforcing Steel
- H. Precast Girders
- I. Metal Railing
- J. Utility Protection Plans
- K. Detailed Sequence of Construction for Structures

Review: The Contractor, at his own expense, shall make such changes in the drawings as may be necessary to conform to the plans and specifications. Prior to return of such drawings, marked "Furnish as Submitted" or "Furnish as Noted", any work which the Contractor may do on the fabrications covered by the same shall be at his own risk, as the FCD/MC will not be responsible for any expense or delays incurred by the Contractor for changes required to make the same conform to the drawings as finally reviewed.

One copy of submitted drawings will be returned to the Contractor marked "Furnish as Submitted" or "Furnish as Noted". If the submittal is marked "Revise and Resubmit" or "Rejected", a new submittal shall be made in the same manner as the original submittal.

When submitted for the Engineer's review, shop drawings, line layouts, etc. shall bear the Contractor's certification that he has reviewed, checked, and approved the shop drawings, etc. and that they are in conformance with the requirements of the Contract Documents. The Engineer will not review any submittals which do not bear the Contractor's certification.

After the review has been completed, the above drawings, lists, samples, design calculations, and other data shall become part of the Contract Documents, and the fabrications furnished shall conform to the submittal.

Review of material and layout drawings consists of review for general conformity to plans and specifications, and in no way relieves the Contractor or the supplier from responsibility for the correctness of the drawings.

Deviations or changes from plans or specifications must be called out as such and will require review by the Engineer for approval or rejection.

Construction of this project shall not begin until the shop drawings and line layouts have been reviewed and approved.

Corrections required on the shop drawings will not constitute a valid reason for delay in the project schedule.

SECTION 105.6 - COOPERATION WITH UTILITIES: An attempt has been made to determine the locations of all underground utilities and drainage pipes, culverts, and structures. The Contractor shall comply with the requirements of the ARS 40-360-21 through 40-360-29 in notification to the interested utility owner prior to the start of construction and shall ascertain the approximate locations of the various underground utilities shown on the plans and as may be brought to his attention. The exact locations of these underground utilities shall be determined by excavations made by the Contractor prior to any trenching operations. It shall be the Contractor's responsibility to cooperate with the pertinent utility companies, so that any obstructing utility installation may be adjusted. Should the Contractor's operations result in damage to any utility, he shall assume full responsibility for such damage.

Any facility or work which may be performed for the accommodation of any utility shall be paid for by the utility owner. The Contractor shall make all arrangements that may be necessary for the construction, and any financial agreement shall be solely between the Contractor and the utility owner.

Existing overhead electrical will be relocated by APS prior to the Contractor's commencement of work.

The following phone numbers, as indicated, should place the Contractor in contact with proper personnel:

- US West Communications, John Kilgus 395-2410
- Salt River Project (Overhead Power) Chuck Hughes. 236-2090
- Arizona Public Service, Ernie Cota. 371-6964
- Location Staking (APS, Mountain Bell, SRP). 263-1100
- Maricopa County Highway Department. 262-3631
- City of Peoria, Ron West. 979-6121
- Flood Control District of Maricopa County 262-1501

The Contractor shall notify the appropriate entities at the beginning of the job to coordinate any sleeves or inserts provided by the utility.

SECTION 105.8 - CONSTRUCTION STAKES, LINES AND GRADES: The project control line and bench mark elevation are shown on the drawings and will be established by the Engineer. The Contractor shall establish offset stakes and temporary bench marks for referencing the designated construction lines and grades. The Contractor shall provide all rough grade, fine grade and structural reference lines and shall be responsible for their conformance to the plans and specifications.

Survey work shall be performed by a qualified and experienced surveyor under the supervision of a licensed land surveyor or licensed Civil Engineer and/or their bona fide employees working under their direct supervision.

The Contractor shall furnish field books to be used for recording survey data and field notes. These books shall be available for inspection by the Engineer at any time and shall become the property of the Engineer upon completion of the work.

The Engineer reserves the right to make inspections and random checks of any portion of the staking and layout work. If, in the Engineer's opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, he will order any or all of the staking and layout work redone at no additional cost.

No separate payment will be made for construction surveying, and the cost thereof shall be included in the price bid for related items of work.

SECTION 105.10 - INSPECTION OF WORK: Work will be subject to City of Peoria inspection and acceptance prior to final acceptance by the Engineer. City inspectors have the right to visit the site at any time, without notice. All requests or comments from the City will be made to the Engineer and the Contractor will then be notified by the Engineer.

SECTION 105.12 - MAINTENANCE DURING CONSTRUCTION: The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end so that the roadway or structures are kept in satisfactory conditions at all times.

SECTION 106 - CONTROL OF MATERIALS:

106.1 - Source of Materials and Quality: The Contractor shall guarantee the construction work for one year against faulty materials, faulty workmanship and failure to meet the requirements of the specifications. 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.

SECTION 106.3 - PLANT INSPECTION:

Off-Site Inspection: The Contractor shall be responsible for all expenses, including but not limited to travel and per diem expenses, for required inspections by the Engineer and/or the cost of inspection and testing by an independent testing laboratory as required by and at the discretion of the Engineer for any inspection of precast concrete girders manufactured outside of a fifty-mile radius from the City limits of Phoenix, Arizona.

Costs associated with the above work will be deducted from the money due the Contractor as noted in Section 108.5.

Within a fifty-mile radius from the City limits of Phoenix, Arizona, costs for inspection of precast concrete girders shall be included in the regular construction contract of the inspector.

SECTION 106.5 - CONTRACTOR'S MARSHALING YARDS: Contractor shall obtain approval of the Engineer when using vacant property to park and service equipment and store material for use.

- A. The Contractor shall notify adjacent property owners/residents of this proposed use.
- B. Any use of vacant property adjacent to or near the project for parking or servicing equipment and/or storing material will require the Contractor to obtain written approval from the property owner. This approval shall contain any requirements which are a condition of this approval.
- C. A signed letter with the property owner's approval shall be submitted along with the Contractor's request to the Engineer for approval for use of the marshaling yard in connection with the project. An appropriate distance from adjacent property will be set by the Engineer on a case by case basis based on the size and type of equipment to be used on the project.
- D. The yard shall be fenced and adequately dust-proofed in a manner as to preclude tracking of mud onto paved City streets.
- E. Work in yard shall be scheduled so as to comply with the City Noise ordinance.
- F. Equipment, materials, etc., shall be located so as to minimize impact on adjacent properties. A sound barrier may be required if deemed necessary by the Engineer.
- G. The Contractor shall clean up property promptly upon completion of the use.
- H. Contractor's request for approval shall specify in detail how he or she proposes to comply with D through G above.

In the event the Contractor uses Flood Control Property for these uses, he shall obtain a license from FCD/MC.

SECTION 107.2 - PERMITS: The Contractor shall be responsible for obtaining all permits and licenses, pay all charges, fees, taxes, and give all notices necessary and incidental to the due and lawful execution 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, telephone number 258-6381.

SECTION 107.10 - CONTRACTOR'S RESPONSIBILITY FOR WORK: The Contractor shall properly guard, protect, and take every precaution necessary against injury or damage to all finished or partially finished work, by the action of the elements or from any other cause until the entire project is completed and accepted by the Engineer. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work before final acceptance at no cost to the Contracting Agency. Partial payment for completed portions of the work shall not release the Contractor from such responsibility.

In case of suspension of the work for any cause whatever, the Contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project and shall erect any necessary temporary structures, signs, or other facilities at no cost to the Contracting Agency.

SECTION 108.4 - SEQUENCE OF CONSTRUCTION: There are no restrictions on the sequence of construction other than one lane of traffic each way must be maintained on 83rd Avenue for the duration of the contract and the Contractor must coordinate the construction of the detour road with U.S. West personnel. It is their intention to bury temporary telephone lines under the detour roadway until such time that permanent lines can be installed on the bridge.

The Contractor must also expose the 16" diameter water line upstream of the bridge prior to any major construction in order to verify depth below channel invert.

SECTION 108.5 - LIMITATION OF OPERATIONS: Should the Contractor or subcontractor elect to perform any work before or after regular working hours, on weekends, or legal holidays, any charges incurred by the District for inspection of the work, surveys, or tests of materials will be deducted from monies due or to become due to the Contractor, including costs included in SECTION 106.3.

Work performed by the consultant under Section 108.5 shall be subject to an overtime billing rate.

Rates for inspection by the consultant and his subs are on file with the District. Both regular and overtime rates are listed for each class of consultant employee. Rates for subconsultants shall include an additional administration fee of 15%.

SECTION 108.9 - FAILURE TO COMPLETE ON TIME: The actual cost per calendar day incurred by the District for Consultant Administrative and Inspection Services on this project will be added to the daily charges as indicated by TABLE 108, LIQUIDATED DAMAGES, as shown in the MAG Uniformed Standard Specifications, 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 any other costs incurred by the District directly attributable to the delay in completing this contract.

SECTION 201 - CLEARING AND GRUBBING: The work under this item consists of removal and disposal of all trees, stumps, asphaltic pavement, and structures within the limits of the roadways and easements, as designated on the plans. Materials shall be disposed of off-site, except in the wetland area upstream of the bridge.

SECTION 205 - ROADWAY EXCAVATION: Roadway excavation shall conform to Section 205 of the Uniform Standard Specifications.

Roadway excavation shall include the grading and excavation for the temporary detour as well as the ultimate roadway as detailed in the construction plans. The Contractor shall obtain FCD approval of the location of the temporary low flow channel prior to its construction. Excavating for the roadway prism shall be measured to the nearest cubic yard within the lines, grades and templates shown on the construction plans per MAG Standard Specifications Section 205.7.

The Contractor shall prepare a written description of the sequence of work and submit it to FCD. Specific attention shall be given to the construction methods and schedule of work in the vicinity of the detour alignment and the soil-cement bank protection. The close proximity of work may require special construction techniques to protect the excavation and the traveling public. The Contractor shall obtain written approval from the Engineer prior to construction.

No separate payment will be made for this item. Payment for all work under this section, including watering and compaction, shall be included in the contract prices bid for related items.

SECTION 206 - STRUCTURE EXCAVATION AND BACKFILL: Structure excavation and backfill shall conform to Section 206 of the Uniform Standard Specifications. The limits of structure excavation and backfill shall be as shown on A.D.O.T. Standard Drawing C-13.40.

The area behind the abutments shall be compacted in accordance with Table 601-2, Type I of the Uniform Standard Specifications. All backfill against the bridge abutments shall consist of free-draining granular material. Backfill should be placed in horizontal lifts consistent with the maximum material size and type of compaction equipment in use and to a minimum of 95% of the maximum density at the optimum moisture content plus or minus 3% as determined in accordance with ASTM D-2922 and D-3017. Compaction equipment should be maintained at least two (2) feet from the structure.

No separate payment will be made for structure excavation or structure backfill and the cost of these items shall be included in the contract prices bid for related items.

SECTION 210 - BORROW EXCAVATION: Borrow excavation shall consist of the furnishing and placing of borrow material in the roadway and detour embankments in accordance with Section 210 of the Uniform Standard Specifications and as shown on the plans.

No separate payment will be made for this item. Payment for all work under this section, including watering and compacting, shall be included in the contract prices bid for related items.

SECTION 211 - FILL CONSTRUCTION: The work under this section consists of constructing embankments for the detour and approach roadways. The material required for the construction of the fill shall be suitable material obtained from roadway excavation or the Skunk Creek Channel excavation and shall be free of all debris and vegetation.

Prior to the placement of fill material, all loose soil, vegetation, any roadside debris, concrete 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 sub-grade surfaces shall be scarified, brought to the proper moisture content and compacted for a minimum depth of eight (8) inches.

The fill shall be compacted in horizontal lifts to sub-base level. The depth of the uncompacted lifts shall not exceed eight (8) inches.

Compaction shall be to a minimum of 95% 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% of optimum.

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.

No separate payment will be made for this item. Payment for all work under this section, including placing, watering and compaction of fill, shall be included in the contract prices bid for related items.

SECTION 212-1 - SOIL CEMENT BANK PROTECTION:

1. Description

The work shall consist of the construction of soil-cement bank protection channel lining, as required by the Plans, including trench excavation, protection of existing utilities, backfill, and dewatering if required. Contractor shall exercise caution while working in the vicinity of the 16" waterline and shall provide temporary support during construction.

2. Materials

2.1 Portland Cement:

Portland Cement shall be Type II, low alkali and shall comply with MAG 725.2, ASTM C150, CSA A-5, or AASHTO M8t.

2.2 Water:

Water shall be clear and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances. Water shall contain not more than 1,000 parts per million of chlorides as Cl or of sulfates as SO₄. Water shall be sampled and tested in accordance with the requirements of AASHTO T26.

2.3 Aggregate:

The soil used in the soil-cement mix shall not contain any material retained on a one and one-half (1½) inch sieve, nor any deleterious material. Soil for soil-cement shall be

obtained from the required excavations, or from other borrow areas approved by the Engineer and stockpiled on the job site as specified herein. The actual soil to be used shall be analyzed by laboratory tests in order to determine the job mix as set forth herein. The distribution and gradation of materials in the soil-cement lining shall not result in lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from surrounding material.

3. Proportioning:

The Contractor shall use the soil aggregate, fly ash content, lime cement content, and moisture content determined by the Engineer in accordance with laboratory tests. Material sampling, testing and certification shall be as follows: portland cement - certification required per shipment; fly ash - certification required per shipment and one gallon sample; lime - certification required per shipment and one gallon weekly. The Contractor shall allow a minimum of eight (8) days for the cement content results. During the course of the work, the Engineer shall adjust the job mix proportions whenever necessary in order to achieve the minimum design strength shown in Section 8. The Contractor may have to blend overbank silty soils with the clean in-situ sands to maintain ideal soil gradations as specified below and avoid cement overrun. Special blending shall require constructing separate stockpiles for materials to be blended and it shall be performed by the utilization of the separate storage feed bins at the plant to the satisfaction of the Engineer.

Sieve Size	Percent Passing (Dry Weight)
1½"	98% - 100%
#4	60% - 90%
#200	5% - 15%

The Plasticity Index shall be a maximum of 5.

Clay and silt lumps larger than one-half (½) inch shall be screened out of the raw soil prior to mixing. The amount of cement required shall be determined by tests performed by the Engineer in accordance with the procedure specified in Section 11 herein. The required cement content is shown in Section 9 herein. Testing during the life of the project may require changes in the mix requirements which shall be made promptly by the Contractor at the direction of the Engineer.

4. Equipment:

The soil-cement bank protection may be constructed with any combination of machines and/or equipment, except as noted herein, that will produce a completed soil-cement lining meeting the requirements for soil pulverization, cement and water application, mixing, transporting, placing, compacting, finishing, and curing as provided in these Specifications. Proper moisture content shall be determined in accordance with the requirements of AASHTO T134-70.

Optimum moisture content shall be computed to the nearest 0.1 percent.

5. Construction Requirements:

5.1 Required Contractor Submittals:

Prior to the start of construction, the Contractor shall submit, in writing, for approval, the following items:

- a. The approximate length of soil-cement to be placed prior to starting compaction operations.
- b. The type of compaction equipment to be used.
- c. The type of watering equipment to be used.
- d. The method used to keep surfaces continually moist until subsequent layers of soil cement are placed.
- e. The method used to cure permanently exposed surfaces.
- f. The proposed source of soil, if other than required excavations.

5.2 Preparation:

Before soil-cement processing begins, the area on which soil-cement will be placed shall be graded and shaped to lines and grades as shown on the Plans or as directed by the Engineer. The subgrade shall be scarified to a depth of 6-inches. The subgrade shall be compacted to a minimum of ninety-five (95%) percent of maximum dry density determined in accordance with ASTM D698.

Immediately prior to placement of soil-cement mixture, the subgrade shall be moistened if necessary. Soft or yielding subgrade shall be corrected and made stable before construction proceeds.

5.3 Mixing:

Soil-cement shall be central-plant mixed in an approved twin shaft continuous-flow or batch-type pugmill. The plant shall be equipped with screening, feeding and metering devices that will add the soil, cement (fly ash and lime, if utilized), and water into the mixer in the specified quantities. It should also be equipped with a hydraulically or mechanically operated discharge hopper having a minimum capacity of six (6) cubic yards. Scales are required at both the cement feed, and either to soil or total mix feed locations. Each scale shall record weight of the material and have a digital readout, such that the total discharged weight per hour is displayed. These shall also be calibrated, certified and approved by the Engineer at least forty-eight (48) hours prior to the start of production. Each scale shall be calibrated to an accuracy of plus/minus 2.0%. Soil and cement shall be mixed sufficiently to prevent balls from forming when water is added.

The mixing time shall be that time which is required to secure a homogeneous, intimate, uniform mixture of the soil, cement, and water.

Free and safe access to the plant must be provided to the Engineer at all times for inspection of the plant's operation and for sampling the soil-cement mixture and its components.

5.4 Required Moisture:

At the time of compaction, the moisture content shall not be below optimum and shall not be more than two (2) percentage points above optimum when the mean air temperature during construction hours does not exceed 90 degrees F. When the mean air temperature does exceed 90 degrees F, or there is a breeze or wind which promotes the rapid drying out of the soil-cement mixture, the moisture content of said mix shall be increased as needed at the direction of the Engineer, but shall be less than that quantity that will cause the soil-cement to become unstable during compaction and finishing operations.

5.5 Handling:

The soil-cement mixture, if transported, shall be transported from the mixing area to the embankment in clean equipment provided with suitable protective devices in unfavorable weather. The total elapsed time between the addition of water to the mixture and the start of compaction shall be the minimum possible. In no case shall the total elapsed time exceed thirty (30) minutes. (This time may be reduced by the Engineer when the air temperature exceeds 90 degrees F or when there is a breeze or wind which promotes rapid drying of the soil-cement mixture.)

The Contractor shall take all necessary precautions to avoid damage to completed soil cement by the equipment and to avoid the deposition of raw earth or foreign materials between layers of soil-cement. Earth ramps crossing completed soil cement must have at least two (2) foot compacted thickness. Where ramps are constructed over soil-cement that is not to grade, all foreign materials and the uppermost one (1) inch of the previously placed soil-cement mixture must be removed prior to the continuation of the soil-cement construction.

5.6 Placing:

The mixture shall be placed on the moistened subgrade embankment, or previously completed soil-cement with spreading equipment that will produce layers of such widths and thicknesses as are necessary for compaction to the required dimensions of the completed soil-cement layers.

The compacted layers of soil-cement shall not exceed eight (8) inches in thickness, nor be less than four (4) inches in thickness.

Each successive layer shall be placed as soon as practicable after the preceding layer is completed and accepted.

All soil-cement surfaces that will be in contact with succeeding layers of soil-cement shall be kept continuously moist by fog spraying until placement of the subsequent layer, provided that the Contractor will not be required to keep such surfaces continually moist for a period longer than seven (7) days. Mixing shall not proceed when the soil aggregate or the area on which the soil-cement is to be placed is frozen. Soil-cement shall not be mixed or placed when the air temperature is below forty-five (45) degrees F (7 degrees C), unless the air temperature is at least forty (40) degrees F (5 degrees C) and rising.

5.7 Compaction:

Soil-cement shall be uniformly compacted to a minimum of 95% of maximum density as determined by AASHTO T134 and Arizona 222b and shall be verified by field density tests. In place moisture and density shall be determined in accordance with AASHTO T191, T238 and T239 procedures; however, Arizona 231 is not acceptable. Wheel rolling with only hauling equipment shall not be an acceptable method of compaction.

At the start of compaction, the mixture shall be in a uniform, loose condition throughout its full depth. Its moisture content shall be as specified in Subsection 5.4 herein. No section shall be left undisturbed for longer than thirty (30) minutes during compaction operations. Compaction of each layer shall be done in such a manner as to produce a dense surface, free of compaction planes, in not longer than one (1) hour from the time water is added to the mixture. Whenever the Contractor's operation is interrupted for more than two (2) hours, the top surface of the completed layer, if smooth, shall be scarified to a depth of at least one (1) inch, at a minimum of one (1) inch spacing, with a spike-tooth instrument prior to placement of the next lift. The surface, after said scarifying, shall be swept using a power broom or other method approved by the Engineer to completely free the surface of all loose material prior to actual placement of the soil-cement mixture for the next lift.

5.8 Finishing:

After compaction, the soil-cement shall be further shaped, if necessary, to the required lines, grades and cross sections and rolled in a reasonable smooth surface. The face of soil-cement above riverbed shall be trimmed at the end of each days placement.

5.9 Curing:

Temporarily exposed surfaces shall be kept moist as set forth in Subsection 5.6.

Care must be exercised to ensure that no curing material other than water is applied to the surfaces that will be in contact with succeeding layers.

Permanently exposed surfaces shall be kept in a moist condition for seven (7) days, or they may be covered with some suitable curing material, subject to the Engineer's approval. Any damage to the protective covering within seven (7) days shall be repaired to the satisfaction of the Engineer.

Regardless of the curing material used, the permanently exposed surfaces shall be kept moist until the protective cover is applied. Such protective cover is to be applied as soon as practicable, with a maximum time limit of twenty-four (24) hours between the finishing of the surface and the application of the protective cover or membrane. When necessary, the soil-cement shall be protected from freezing of seven (7) days after its construction by a covering of loose earth, straw, or other suitable material approved by the Engineer.

5.10 Construction Joints:

At the end of each day's work, or whenever construction operations are interrupted for more than two (2) hours, a transverse construction joint shall be formed by cutting back into the completed work to form a full-depth vertical face.

5.11 Maintenance:

The Contractor shall be required, within the limits of the Contract, to maintain the soil-cement in good condition until all work is completed and accepted. Maintenance shall include immediate repairs of any defects that may occur. This work shall be done by the Contractor at his own expense and repeated as often as necessary. Faulty work shall be replaced for a full depth of the layer.

6. Inspection and Testing:

The Engineer, with the assistance and cooperation of the Contractor, will make such inspections and tests as he deems necessary to insure the conformance of the work to the Contract Documents. These inspections and tests may include, but will not be limited to: (1) the taking of test samples of the soil-cement and its individual components at all stages of processing and after completion, and (2) the close observation of the operation of all equipment used on the work. Only those materials, machines, and methods meeting the requirements of the Contract Documents shall be approved by the Engineer.

All testing of soil-cement or its individual components, unless otherwise provided specifically in the Contract Documents, shall be in accordance with the latest referenced ASTM, or AASHTO Specifications in effect as of the date of advertisement for bids on the project.

Testing for proper compaction shall be done on at least every other lift of compacted soil-cement and every 1000 cubic yards of placed soil-cement at any location chosen by the testing personnel. If the lift being tested does not pass the minimum 95% density requirements, it must be reworked as directed by the Engineer until it passes or be removed at the Contractor's expense. The Contractor shall not be permitted to continue placing lifts of soil-cement on any lift which has failed the compaction tests until such time as that lift has been reworked, retested, and passed as to meeting density requirements.

The initial acceptance of material shall in no way preclude further examination and testing at any time, during the course of construction or subsequent warranty period, the Engineer suspects that the material is no longer properly represented by the acceptance sample. The acceptance at any time of any material incorporated into the work shall not bar its future rejection if it is subsequently found to be defective in quality or uniformity.

7. Measurement and Payment:

7.1 Measurement:

This work shall be measured (1) in cubic yards of completed-in-place soil-cement bank protection channel lining as determined by the specified lines, grades, and cross sections shown on the Plans. Any waste of cement and/or soil-cement by the Contractor during the handling, mixing, placing, etc., operations shall not be paid for.

7.2 Payment:

This work shall be paid for at the contract unit price bid per cubic yard of soil-cement bank protection channel lining complete in place. Such payment shall constitute full reimbursement for all work necessary to complete the soil-cement channel bank protection, dewatering, trench excavation, watering, mixing, placing, compacting, curing, inspection and testing assistance, and all other incidental operations.

8. Mix Design Methodology:

The design requirements for the soil-cement bank protection shall be such that it has a compressive strength of 750 psi at the end of seven (7) days plus 2% additional cement added for erosion resistance. The minimum acceptance strength shall be that developed as a result of adding 2% cement to the base amount determined. For example, if the mix design shows that 6% cement is required to achieve 750 psi in seven (7) days, the total cement content shall be $6.0\% + 2.0\% = 8.0\%$. Hence, the governing strength shall be that strength which is acquired by the mix

design at 8%. A 24-hour test will be run to monitor the mix design on a daily basis. Experience has shown that 24-hour compressive strength results for moist cured samples are approximately 50 to 60 percent of the corresponding seven (7) day compressive strength results (moist cured for six (6) days and soaked in water for 24 hours). In the example cited herein, once the design strength mix of 6.0% + 2.0% or 8.0% cement is determined, a 24-hour test will be run using the mix to obtain a 24-hour compressive strength which will be used to monitor the daily output of the central plant. Seven (7) day samples will also be taken for final acceptance. The amount of cement thus determined by laboratory testing shall continue to be monitored throughout the life of the project with modification as required to meet existing field conditions.

9. Mix Design for this Project:

For bidding purposes only, the estimated mix design for channel bank protection shall be as follows:

Base Cement Content	8.0%
Addition for Durability and Erosion	2.0%
Fly Ash	1.5%
Lime	1.0%

9.1 Total Cement Required:

The cement and aggregate are to be weight batched per the approved mix design. The water content of the aggregate shall be monitored continuously and the mixing water adjusted accordingly.

The percent of cement to be used in the mix shall be calculated to be the weight of cement divided by the total weight of the dry compacted soil-cement. The actual mix design used on this project shall be determined by laboratory tests on material stockpiled.

Additional fly ash shall be used with the approval of the Engineer. A maximum of fifteen (15) percent of the total weight of cement may be replaced with fly ash, in accordance with the requirements detailed in Section 725 of the MAG Standard Specifications. An additional scale shall be required for the fly ash and shall conform to Section 5.3 - Mixing, of these Technical Provisions. Fly ash will be considered for incorporation into the mix design upon receipt of a Value Engineering proposal from the Contractor.

10. Stockpiling of Aggregate:

Soil aggregate stockpile shall be constructed on level, firm ground free of brush, trees, stumps, roots, rubbish, debris, and other objectionable or deleterious material.

Stockpiled material should be thoroughly mixed throughout its depth, width, and length before utilization. The material should be homogeneous and uniform in color, gradation, and moisture throughout.

Stockpile sampling will be performed by the Engineer after the required amount of soil aggregate for the entire soil-cement job has been excavated and stockpiled. After the stockpile has been sampled, no material will be added to it without the approval of the Engineer.

Stockpile(s) shall be completed at least eight (8) days prior to start of soil-cement production. Mix design shall then be performed by the Engineer, to determine job mix proportions.

11. Testing Procedure for Determination of Cement Content Required for Soil-Cement Mixtures (A Modification of Arizona 220 Test Method):

11.1 Description:

a. This method of test is intended for determining the percentage of Portland Cement required in developing soil-cement mixtures by the determination of the compressive strength of molded specimens at varying cement contents.

b. Equipment Required:

(1) Mold - A cylindrical metal mold having a capacity of 1/30 cubic foot with an internal diameter of 4.0 inches plus/minus .005 inch and a height of 4.585 inches plus/minus .005 inch equipped with a detachable collar approximately 2½ inches in height.

(2) Rammer - A metal rammer manually or mechanically operated having a 2 inch diameter circular face and weighing 5.5 lbs. The rammer shall be equipped with a suitable arrangement to control the height of drop to a free fall of 12 inches above the elevation of the cement treated mixture.

(3) Balance - A balance or scale of at least 5 kg. capacity sensitive to 0.5 gm.

(4) Drying Oven - A thermostatically controlled drying oven capable of maintaining a temperature of 230 degrees plus/minus 9 degrees F (110 degrees plus/minus 5 degrees C).

(5) Straightedge - A rigid steel straightedge 12 inches in length having one beveled edge.

(6) Sieve - 3/4 inch sieve conforming to the requirements of the Specifications for sieves for Testing Purposes (ASTM E11-81 and AASHTO M92).

(7) Miscellaneous mixing tools and pans.

(8) Speedy Moisture Tester (optional).

(9) Equipment required for the determination of the Compressive Strength of Cylindrical Concrete Specimens (ASTM C39, C42, C511).

11.2 Sample Preparation:

- a. If the sample is damp when received, it shall be dried until it becomes friable under a trowel. Drying may be accomplished by air drying or by the use of drying apparatus such that the temperature of the sample does not exceed 140 degrees F (60 degrees C).
- b. After drying prepare the sample for testing by separating the aggregate retained on the 3/4 inch sieve and breaking up the remaining soils aggregations to pass the 3/4 inch sieve in a manner which will avoid reducing the natural size of individual particles.
- c. Select and prepare eight separate test charges of dry soil cement of approximately 2500 gm. each. Two samples are to be made for every cement percentage selected.
- d. Add the first of the cement contents to be used and mix thoroughly together.

(1) Example: If the percent cement selected is 10%

Dry Soil Weight	=	2250 gms. (90%)
Portland Cement	=	250 gms. (10%)
TOTAL	=	2,500 gms. (100%)

(2) Example: If the mix design percentages selected are cement (10%), fly ash (1.5%) and lime (1%):

Dry Soil Weight	=	2,187.5 gms. (87.5%)
Portland Cement	=	250.0 gms. (10%)
Fly Ash	=	37.5 gms. (1.5%)
Lime	=	25.0 gms. (1%)
TOTAL	=	2,500.0 gms. (100%)

- e. The moisture content to be added to each test charge is determined by making a maximum density-optimum moisture determination with the anticipated required cement content (according to AASHTO T 99-74 Method C) and using this developed optimum-moisture thereafter for all specimens prepared.

11.3 Compaction:

- a. Form a specimen by compacting a prepared mixture in the mold with the collar attached in three equal layers to give a total compacted depth of 5 inches. Compact each layer by applying 25 uniformly distributed blows from a 5.5 lb. (2.5 kg.) rammer dropping free from a height of 12 inches (305 mm). Following compaction, remove the extension collar, carefully trim the compacted mixture even with the top of the mold by means of a straightedge and weigh. Multiply the weight of the specimen (in grams.) by 0.06614 to obtain the wet weight per cubic foot. The factor 0.06614 is valid only if the volume of the mold is 1/30 cubic foot. If calibration shows any changes in volume, a new factor shall be calculated.

Assuming the mold has a volume of 1/30 (0.0333) cubic foot the factor is derived as follows:

$$.06614 = 1$$

$$0.0333 \text{ cu. ft.} \times 453.6 \text{ g./lb.}$$

In case of a change in volume of the mold 0.0333 cu. ft. shall be replaced by the decimal fraction for the new volume.

- b. Compact a duplicate specimen in same manner as Step (a).
- c. Extrude both samples from their respective molds using caution and place on glass or non-absorptive plates and store for curing in a moist condition, (i.e., a moist cabinet or a moist room meeting the requirements of ASTM C-511-80).
- d. Determine the moisture content of the prepared samples from the residue.
- e. Determine the Wet Density and Dry Density of the samples.
- f. Repeat steps (a) through (d) on additional samples with increased cement content (in 2% increments) until a complete bracketing of specification requirements is met.

11.4 Determination of Compressive Strength:

- a. At least two (2) cylinders for compressive tests will be taken for each 1,500 cubic yards or less of soil-cement placed.
- b. All specimens must be cured as specified in a moist condition for six (6) days and then immersed for a period of 24 hours in water maintained at 73.4 plus/minus 3 degrees F (23 plus/minus 1.7 degrees C).

- c. Specimens shall then be prepared for the compression test in accordance with ASTM C617.
- d. The compressive strength of the cylinders shall then be determine in accordance with ASTM C-39 and ASTM C-42.
- e. The results shall be reported in a format similar to that shown in the following report form.

Payment for all work under this section will be made at the lump sum price bid for ITEM 212-1 - SOIL-CEMENT BANK PROTECTION, which prices shall include excavation, dewatering, grading and disposal of material excavated from the Skunk Creek Channel and the construction of soil-cement bank protection, as described in Section 7.2.

SECTION 212-2 - DROP STRUCTURES: The design requirements for the soil-cement drop structures shall be as specified above for the soil-cement bank protection except that the required 7-day compressive strength shall be 1000 psi.

The Contractor's attention is directed to sheets 38 and 39 of the Contract Plans. A portion of the existing 18" thick grouted riprap on the south bank of the Skunk Creek Channel will require removal by the Contractor in order to construct the soil-cement drop structure at Channel Station 69+80.

Upon completion of the drop structure construction, the grouted riprap shall be replaced in kind to join the drop structure as shown on the plans.

Excess grouted riprap shall be removed by the Contractor away from the construction site.

Payment for all work under this item will be made at the contract unit price bid per linear foot for ITEM 212-2 - SOIL-CEMENT DROP STRUCTURE, complete in place, including soil-cement, construction excavation, backfill and compaction, upstream and downstream cobble, scour protection beds, dewatering, removal & replacement of grouted riprap lining and removal & disposal of excess materials.

The encased sanitary sewer in the drop structure of Channel Station 25+00 is a separate bid item.

SECTION 215 - EARTHWORK FOR OPEN CHANNELS: The work under this item shall consist of the excavation and grading of the Skunk Creek Channel to the lines and grades shown on the plans and in accordance with Section 215 of the Uniform Standard Specifications and the construction of soil-cement bank protection within the limits shown on the drawings.

SOIL-CEMENT COMPRESSIVE STRENGTH TEST REPORT

MATERIAL _____ PROJECT NAME _____
 IDENTIFICATION _____ LOT NUMBERS _____
 SOURCE OF SAMPLE _____ CONTRACTOR _____
 LOCATION OF SUPPLY _____ SAMPLED BY _____ DATE _____

Cement By Weight									
I.D. Number									
Diameter (D)									
Area (in ²)									
Height (L)									
Max. Load (LBS.)									
Compressive Strength (PSI)									
ASTM C42	L/D								
	Correction Factor								
Corrected Compressive Strength (PSI)									
Moisture %									
Wet Density - PCF									
Dry Density - PCF									
Time Sampled									
Location Placed (STA.)									

Tested By _____ Date _____ Reviewed By _____ Date _____

Remarks _____

Material excavated under this item may be used for roadway and detour embankment provided that it meets the requirements of SECTION 210 - BORROW EXCAVATION. Material that is determined to be unsuitable for use in roadway and detour embankments shall be disposed of away from the project site.

The Contractor's attention is directed in the "Natural Area" shown on sheet 7 of the channel plans. No plant material is to be removed from the area delineated on the plans nor is the area to be disturbed, disrupted or encroached upon in any way by the Contractor's operations.

Ground and Surface Water: Surface water and/or water-table elevations at the site during certain periods of the year may create a need for dewatering during construction of the Skunk Creek Channelization, bridge and drop structures. It is the Contractor's responsibility to remove and/or control ground water and surface water so that all construction, inclusive of all earth filling and backfilling, shall not be performed in water or under water unless otherwise expressly permitted by the plans, the standard specifications, or these Special Provisions.

No direct payment will be made for dewatering ground water or channelizing and diverting surface water. Costs for this work shall be considered incidental to and included in the bid items for Channel Excavation, Soil-Cement Bank Protection and Soil-Cement Drop Structure and the various bid items for bridge construction.

Prior to the commencement of construction, the Contractor shall submit to the Engineer an acceptable plan for handling ground and surface waters within the channelization limits during construction.

Payment for all work under this item will be made at the contract unit price per cubic yard bid for ITEM 215 - CHANNEL EXCAVATION.

Excavations on prior projects in the Skunk Creek Channel have uncovered evidence of illegal landfills. As a precautionary measure, therefore, the Contractor shall be required to comply with the following guidelines in anticipation of encountering a landfill during channel excavation.

LANDFILL EXCAVATION MONITORING

Description: The Contractor shall establish and maintain an effective landfill excavation monitoring system. The landfill excavation monitoring system shall consist of plans, procedures, and organization necessary to provide monitoring and reporting operations which comply with contract requirements. The system shall cover monitoring of excavation operations in the landfill areas, as identified by the Engineer, and shall be keyed to the proposed construction sequence.

Landfill Excavation Monitoring Plan: The Contractor shall furnish for approval by the Engineer, not later than thirty (30) calendar days after receipt of Notice to Proceed, the Landfill Excavation Monitoring Plan. The plan shall identify personnel, procedures, instructions,

records, and forms to be used; the Contractor or his subconsultants will need to make arrangements for implementation of a clean-up program for hazardous wastes, should it be necessary.

Before start of construction, the Contractor shall meet with the District and the Engineer to discuss the Contractor's Landfill Excavation Monitoring system. During the meeting, a mutual understanding of the system details shall be developed, including the requirements for reporting the Landfill Excavation Monitoring operations, control activities, testing, administration of the system for both on-site work and off-site testing, and the interrelationship of Contractor's Inspection and control with the District's inspection. Minutes of the meeting shall be prepared and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file.

This plan shall include as a minimum, the following:

- (i) A description of the Landfill Excavation Monitoring organization individual or subconsultant;
- (ii) the name, qualifications, duties, responsibilities, and authorities of each person assigned Landfill Excavation Monitoring and/or testing functions;
- (iii) procedures and subconsultants intended to be used in the event of emergencies or the encounter of hazardous wastes during excavations;
- (iv) reporting procedures to document the type and number of control activities, results of control activities, proposed remedial action (if any), and corrective actions taken; and,
- (v) the individual, within his organization at the site of the work, who shall be responsible for overall management of Landfill Excavation Monitoring and have the authority to act in all monitoring matters for the Contractor.

Acceptance of the Contractor's plan will be required prior to the start of landfill excavation. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The District reserves the right to require the Contractor to make changes in his Landfill Excavation Monitoring plan and operations as necessary to obtain the monitoring specified.

Measurement and Payment: No separate payment shall be made for providing monitoring of existing landfills, the cost being assumed to incidental to the cost of Channel Excavation. Should hazardous chemicals or waste be encountered during the course of these inspections, the Engineer shall be notified immediately, with a follow-up notification in writing. The cost of implementation of cleanup will be based upon Actual Cost Work as described in Section 109 of the Uniform Standard Specifications - Measurements and Payments.

SECTION 301 - SUBGRADE PREPARATION: Subgrade preparation shall consist of shaping the roadway subgrade to the grades and cross-sections for the detour road and the bridge approaches as shown on the plans and in accordance with Section 301 of the Uniform Standard Specifications. This item also includes all work necessary for the removal of existing pavement, construction of ditches, and excavation, filling, grading, shaping and miscellaneous grading work between the edge of pavement and the right-of-way.

Subsection 301.3 - RELATIVE COMPACTION, should be modified as follows:

- (B) Other streets and traffic ways 95%
- (C) Curbs, gutters and sidewalks 90%

Payment for all work under this section shall be made at the contract unit price per square yard bid for ITEM 301 - SUBGRADE PREPARATION.

SECTION 310 - UNTREATED BASE: Select Material and Aggregate Base shall conform to the requirements of Section 702 of the Uniform Standard Specifications. Aggregate Base shall be crushed in accordance with Section 702.2. Select Material shall be Type "A".

The Contractor will be required to furnish the Engineer certified weight tickets covering all of the Select Material and Aggregate Base placed on the project. Final pay quantities will be based upon the scale tickets accepted by the Engineer.

SECTION 315 - BITUMINOUS PRIME COAT: The bituminous material shall be Grade MC-70 or MC-250 liquid asphalt. Prime coat shall be applied at the rate of 0.4 gallon per square yard unless otherwise specified by the Engineer. The Engineer shall determine whether or not prime coat will be required.

SECTION 321 - ASPHALT CONCRETE PAVEMENT: Asphalt concrete pavement shall consist of furnishing and placing a plant-mixed asphalt concrete road surfacing material to the compacted thickness shown on the plans and in accordance with Section 321 of the Uniform Standard Specifications.

Bituminous material shall be AR-4000 paving asphalt conforming to Section 710 and 711 of the Uniform Standard Specifications or AC-30 complying with ADOT Table 1005-1 or Table 1005-1A.

The mineral aggregate shall meet the grading requirements within the range of the specified tolerances for Mix-Designation C-3/4 in accordance with Section 710 of the Uniform Standard Specifications and Maricopa County Highway Department Supplement to the Uniform Standard Specifications.

The work shall fully comply with Section 321 except that no mineral filler or blending sand will be required.

In addition to pugmill type mixing plants, drum dryer mixers will be allowed in accordance with the Uniform Standard Specifications Section 710.8. The moisture content of the bituminous mixture immediately behind the paver shall not exceed three (3) percent. If a drum dryer is used, the type of oil shall be AR-8000 or AC-30 as specified above.

The proper proportioning of the material at the cold feed shall be determined by the Contractor and approved by the Engineer prior to the production of asphalt concrete. Production shall not commence until calibration test indicate that 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 the materials. Mixing shall continue until the uniformity of coating, when tested in accordance with the requirements of AASHTO T-195, is at least 95 percent.

The Contractor shall furnish certified weight tickets covering all plant-mixed asphalt concrete placed on the project.

Payment for this item will be made at the contract unit price bid per ton for ITEM 321: C-3/4, ASPHALT CONCRETE.

SECTION 350 - REMOVAL OF EXISTING IMPROVEMENTS: The work under this section shall consist of removing and disposing of any obstacle to construction whether it is shown on the plans or not, unless it is specifically called out on the plans to be removed or relocated by other agencies, and shall be in accordance with Section 350 of the Uniform Standard Specifications.

Removal of the existing bridge on 83rd Avenue at Skunk Creek, the detour road and drainage pipes, as well as miscellaneous removal items, as shown on the plans, shall be included in this item.

The concrete and steel-pile piers and the steel piles at the abutments of the existing bridge shall be removed to a minimum of five (5) feet below finished channel grade, unless they conflict with new construction, where upon they shall be removed entirely.

As-built drawings of the existing bridge are available for examination at the office of the Engineer.

The disposal of all waste materials 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 road construction waste 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.

Payment for this item will be made at the contract lump sum price bid for ITEM 350 - REMOVAL OF EXISTING IMPROVEMENTS.

SECTION 401 - TRAFFIC CONTROL: Traffic control shall conform to the applicable paragraphs of Section 401 of the Uniform Standard Specifications, the City of Phoenix Barricade Manual and as specified herein.

The number and types of barricades, signs, delineators, barriers and all other traffic control devices shall be subject to approval. However, approval of traffic control devices and the approval of the Contractor's method of application of all traffic control measures shall not relieve the Contractor of the responsibility of protecting the work, the workmen and the traveling public.

The Contractor shall provide and maintain safe and adequate access, including pavement surfacing of the detour for two-way traffic, at all times. The detour to bypass the construction zone shall be as shown on the plans. Construction and detour advance warning signs shall be 48 inches in size and shall be installed 1500, 1000 and 500 feet from the limits of, on all approaches to, the construction zone. A five (5) foot high deceleration berm of loose sandy material with nothing over three inches in size shall be placed completely over the paved portion of the road on each approach to the bridge when required by the construction sequencing. Internal construction barricading and signing shall be required to provide access and guide traffic through the zone with a speed posted at 25 miles per hour.

The Contractor shall not reduce the traffic lanes on 83rd Avenue, or on the detour without the approval of the Engineer.

All necessary signs and barricades shall remain three working days beyond acceptance of the project by the Owner.

In the event of a flow in Skunk Creek that is beyond the capacity of the temporary Corrugated Metal Pipes (CMP) beneath the detour road, it will be the Contractor's responsibility, at no cost to the District, to close the detour with appropriate barricades and safety devices and to post signs announcing the closure of 83rd Avenue at strategic locations. When the flow has subsided and can be accommodated by the CMP's, the Contractor will restore the detour road to its original condition.

City of Peoria personnel will stripe the final road after acceptance. The Contractor shall not place any temporary striping on the final overlay of asphalt.

Payment for providing and maintaining traffic control will be made at the lump sum price bid for ITEM 401 - TRAFFIC CONTROL. Such prices shall include all traffic control devices and traffic control measures, such as warning and control signs, barricades, lighting devices, paint striping, delineators, flagmen and other appurtenant items related to traffic control and safety. Included in the price shall be the maintenance of the detour pavement surface for as long as the detour is needed including prompt repair of all bumps and holes and pavement striping of the detour.

SECTION 420 - FENCING

Fencing shall include all furnishing of materials, tools, hardware, labor and incidentals to remove, store, replace or install fence as delineated in the construction plans. The work shall be accomplished in conformance with Section 903 of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction.

Measurement and payment for fencing shall be by the linear foot and shall include posts, braces, concrete, wire and any required incidentals. Payment for removal and replacement shall be separate from payment for new fence. Gates shall be measured and paid for separately.

SECTION 502 - CAISSON CONSTRUCTION: The work under this section consists of furnishing all labor, materials and equipment necessary for the construction of the cast-in-place concrete caissons at the bridge in accordance with the details shown on the plans and the Uniform Standard Specifications.

For bidding purposes, caissons are defined as the entire length of 5' diameter drilled shafts at the abutments, and the entire length of 7' diameter shafts only at the piers. The 5' diameter formed columns at the piers are included in the pier concrete and reinforced steel quantities.

All holes shall be examined for verticality and any hole which shows more than a 6-inch deviation from the center of the hole at the top to the center of the hole at the bottom shall be rejected and corrected at no extra costs to the District.

All loose material existing at the bottom of the hole after drilling operations have been completed shall be removed before placing concrete in the hole. Material resulting from drilling holes may be used in the adjacent roadway provided that it meets the requirements of SECTION 210 - BORROW EXCAVATION or disposed of as directed.

Before any personnel enter the caisson drill holes for cleaning or inspection purposes, the Contractor shall install a suitable casing or shield for protection against caving.

The use of water for drilling operations or for any other purposes where it may enter the hole will not be permitted. Surface water shall not be permitted to enter the hole, and all water that may have infiltrated the hole shall be removed from the hole before concrete is placed therein.

Due to the caving tendencies of the upper sand deposits and the varying degree of cementation in the deeper silty and clayey sand and gravel deposits, construction of the drilled piers may require use of slurry assisted drilling techniques or other stabilization methods. Where slurry is used, pressure relief holes shall be made in the sides or cutters in order to insure that wall erosion or additional caving is not induced during vertical bucket travel. It shall be verified by inspection and measurement that excavations are open to the specified depths. It shall be ensured that slurry is properly desanded and that all loose sand is removed from the base of the excavation prior to beginning concreting operations.

Properties of Slurry: The slurry shall consist of a stable suspension of commercial grade bentonite (API Spec. 13A) in water, and shall be stirred or agitated prior to use so as to maintain a uniform consistency and viscosity. Water used for mixing shall be the quality of drinking water with regard to soluble salts; although water contaminated by bacteria is acceptable. Water in which the chemical quality permits flocculation of the bentonite cannot be used. Density of slurry shall be a minimum of 64 and a maximum of 75 pounds per cubic foot. Slurry viscosity by the Marsh Cone method shall be in the range of 30 to 90 seconds.

Placement of Slurry: The level of bentonite slurry shall not be maintained lower than 4.0 feet above the level of standing groundwater or soil zones susceptible to caving. In the event of a sudden loss in bentonite, the boring shall be backfilled immediately and instructions from the geotechnical engineer sought.

Where a completed excavation containing slurry is left open overnight prior to placement of concrete, a probe shall be lowered to measure the amount of caving materials or settling of slurry which has taken place.

Where more than four inches of material has settled, an additional pass of the auger or bucket shall be made for purposes of cleaning.

Placement of Reinforcing Steel: The steel reinforcing cage shall be completely formed at the surface and lowered in one continuous operation with a crane of sufficient capacity. Clearance between the reinforcing steel and the walls of the excavation shall be provided by the use of space blocks which are firmly tied to the reinforcing cage in such a manner that they will not become disconnected or disoriented during lowering of the cage into the hole.

Placement of Concrete: Concrete shall be placed by means of a gravity-fed tremie pipe or a combination concrete pump and tremie pipe. The tremie pipe shall be of a rigid, watertight pipe for the full length of the caisson and shall not be less than six inches in diameter. The concrete shall be vibrated to insure that the concrete in the hole is dense and homogeneous.

The Contractor shall furnish a pump with a minimum capacity of sixty (60) cubic yards per hour at a pumping head of two hundred (200) feet.

The Contractor shall be required to have a second (backup) pump on-site during concreting operations unless the Contractor can assure the Engineer of delivery of a second pump to the site on 45 minutes or less notice.

Reinforcing steel shall be in place and the tremie pipe shall be inserted to the tip of the hole before concrete placement is started. Concrete shall be placed in a continuous operation. The delivery pipe shall be slowly withdrawn as the elevation of the concrete in the hole rises, but the discharge end of the pipe shall, at all times, be maintained a minimum of 5.0 feet below the surface of the concrete.

Non-Destructive Testing: If, in the opinion of the Engineer, it is necessary to test the soundness of the concrete placed under this section, the testing will be accomplished by a non-destructive method.

The Contractor shall install four (4), two (2) inch I.D. Schedule 80 PVC pipe axially into each bore hole. The pipe shall be tied to the reinforcing cage and capped at the bottom. No separate payment will be made for the furnishing and placing of the PVC pipes.

The non-destructive testing, if required, will be performed by the District under separate contract and will be accomplished at no cost to the Contractor.

Measurement for payment of caisson construction shall be by the linear foot for the length from the bottom of the pier cap to the bottom of each caisson.

Payment for caisson construction shall be made at the unit price per lineal foot bid for ITEM 502 - CAISSON CONSTRUCTION complete in place.

SECTION 505 - CONCRETE STRUCTURES: The work under this section shall consist of furnishing all labor, materials and equipment necessary for the construction of the cast-in-place concrete bridge structure, in accordance with the plans and Section 505 of the Uniform Standard Specifications. Portland Cement concrete shall be Class A and AA. Structural steel and other items imbedded in concrete, such as deck drains, expansion joints, etc., are incidental to concrete bid item.

The Contractor's attention is directed to the U.S. West telephone ducts on the west side of the bridge. All material for the 8 ducts and duct support system, including the threaded loop inserts and hangers will be provided by U.S. West.

The installation of the ducts and support system is the responsibility of the Contractor. Eight (8), 4" diameter, PVC telephone ducts are to be installed on the west side of the bridge at the location shown on the plans. The ducts shall extend one (1) foot beyond the end of one

approach slab and extend throughout the bridge length to a point one (1) foot beyond the edge of the other approach slab. Installation of the ducts and support system shall be subject to direction by U.S. West personnel.

Upon completion of the duct installation through the abutment back-walls, the void space in the back-wall blockout shall be filled with non-shrink grout.

No separate payment will be made for the installation of the telephone ducts. Payment for all installation work is to be included in the contract prices bid for related items.

Payment for all work under this section, except for installation of the telephone ducts, will be made at the unit price bid per cubic yard for ITEMS 505-1 and 505-2: Class A and AA CONCRETE respectively and the unit price bid per pound for ITEM 505-4: REINFORCING STEEL.

SECTION 506 - PRECAST PRESTRESSED CONCRETE MEMBERS: The work under this section consists of furnishing and placing prestressed concrete girders in accordance with the plans and Section 506 of the Uniform Standard Specifications.

Bearing pads shall meet the requirements of SECTION 25 - ELASTOMERIC BEARINGS of the AASHTO Standard Specifications for Highway Bridges, 1983 Edition and interims to date.

As shown on the plans, the Contractor has the option of providing either pretensioned or post-tensioned girders.

SECTION 615 - SEWER LINE CONSTRUCTION: The work under this section consists of furnishing all labor, materials and equipment necessary for the installation of the 20" diameter ductile iron pipe (DIP) sanitary sewer - both encased and not encased - and the 18" & 21" diameter High Density Polyethylene (DHPE) sanitary sewer pipe as shown on the plans.

All construction is to conform to the latest MAG specifications and details and City of Peoria supplements to MAG specifications and details, unless modified on the plans.

The Engineer shall be notified twenty-four (24) hours prior to any construction work at 275-4997. Construction work concealed without inspection shall be subject to removal and replacement at the Contractor's expense.

Any alterations or additions to the plans must be confirmed with the Engineer prior to construction being done in the field.

All sewer lines with cover of ten (10) feet up to fifteen (15) feet shall have Class "B" bedding.

All sewer lines with cover exceeding fifteen (15) feet shall have bedding which meets City of Phoenix Standard Detail P-1120 of MAG Supplements.

Bedding shall be placed, compacted and approved prior to placing backfill.

Backfill at existing streets and drainage structures to be 100% ABC to 95% density, with pavement replacement to be according to MAG detail 200 "T-top".

All compaction shall be TYPE I as shown in Table 601-2, unless otherwise indicated.

All precast manholes to be impression ring type bases.

All manholes shall be adjusted to the finish grade upon the completion of pavement work.

The following MAG Uniform Standard Details are specifically NOT approved:

- No. 425 24" aluminum manhole frame and cover
- No. 738 Manhole steps - "Cast Iron"

DUCTILE IRON PIPE

A. General

All ductile iron pipe and fittings for sanitary sewers shall be new, of good quality and of such composition that the pipe and fittings are strong, tough, resilient, of even grain and soft enough for satisfactory drilling and cutting. The pipe and fittings shall comply with the specifications hereinafter set forth.

The pipe and fittings shall be smooth and free from scales, lumps, blisters, sand holes and defects of every nature. No plugging, filling, burning-in or welding will be permitted.

B. Pipe

All ductile iron pipe shall be designed in accordance with ANSI Standard A21.50 and shall be manufactured in accordance with ANSI Standard A21.51.

Pipe shall be furnished in nominal laying lengths of 18 or 20 feet.

Wall thickness and class shall be as follows:

Pipe Size = 20" diameter
Thickness Class = 52
Wall Thickness = 0.42"

C. Certifications

The Contractor shall furnish six (6) copies of the manufacturer's sworn certificate of inspection and testing of all ductile iron pipe and ductile iron fittings to be used on the work. All

ductile iron pipe and fittings will be subject to further inspection and approval by the Engineer after delivery of material to job site. No broken, cracked, misshaped, imperfectly coated, unsatisfactory or otherwise damaged ductile iron pipe or fittings shall be used.

D. Markings

All ductile iron pipe shall be marked in accordance with Section 51-10, "Marking Pipe" of ANSI Standard A21.51. All ductile iron fittings shall be marked in accordance with ANSI Standard A21.10, Section 10-9, "Markings on Fittings". Marking shall also include the manufacturer's initials, year cast and class letter or number. Mark number and weight shall be conspicuously painted on each piece.

E. Fittings

All fittings shall be mechanical joint, or push-on rubber gasket joint ductile iron fittings. Mechanical joint ductile iron fittings shall have mechanical joints in accordance with ANSI Standard A21.10 and A21.11. Fittings with push-on joints shall be in accordance with ANSI Standard A21.11.

F. Joints

All joints shall be mechanical joints, except that push-on rubber gasket joints may be used in place of mechanical joints where mechanical joints are not specifically called for on the contract drawings. All mechanical joints and push-on joints shall be securely anchored at all bends.

1. Mechanical Joints: Mechanical joints shall conform to the dimensions and requirements of ANSI Standard A21.11 for "Rubber-Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings". Gaskets, glands, bolts and nuts shall be furnished with mechanical joints all in sufficient quantity for assembly of each joint.

Unless otherwise specified, cast iron glands shall be furnished with ductile iron pipe and fittings. Glands shall have a bituminous coating unless otherwise specified. Mechanical joints with retainer glands and set screws shall be used where specifically called for on the contract drawings.

2. Push-On Joints: Push-on rubber gasket joints shall conform to the requirements of ANSI Standard A21.11. Gaskets and lubricant shall be furnished in sufficient quantity for assembly of each joint.

Gasket dimensions shall be in accordance with the manufacturer's standard design dimensions and tolerances. Gaskets shall be vulcanized natural or vulcanized synthetic rubber. No reclaimed rubber shall be used.

The manufacturer shall have qualified the design of his joint by having performed the tests given in Section 11-8 of ANSI Standard A21.11. The manufacturer shall furnish drawings of the joint and gasket if requested by the Engineer.

G. Coating and Lining

The exterior of all ductile iron pipe and fittings for underground installation shall be given a bituminous coating at least one (1) mil thick at the point of manufacture in accordance with ANSI Standard A21.6 or A21.8.

The interior of all ductile iron pipe and fittings shall receive a 40 mils (0.040 inch) nominal, 35 mils (0.035 inch) minimum, lining of polyethylene to be furnished with the pipe. The lining shall be a blend of high-density and low-density polyethylene powders complying with ASTM D-1248 compounded with an inert filler and carbon black to provide resistance to ultraviolet rays during storage above ground. Prior to reheating, 75% or more of the high temperature oxide film must be removed through proper preparation of pipe interior surface. Pipe and fittings shall be uniformly preheated to a temperature adequate to provide uniform fusing of the polyethylene powders and proper bonding to the pipe and fittings. The lining at the ends shall be hermetically sealed and every pipe and fitting shall be subjected to and pass a 400 volt wet sponge, or equivalent, spark test.

Field repairing of the polyethylene lining shall include the following requirements:

1. Remove burrs caused by field cutting of ends or handling damage and smooth out edge of polyethylene lining if made rough by field cutting or handling damage.
2. Remove oil or lubricant used during field cutting operations.
3. Areas of loose lining associated with field cutting operation must be removed and exposed metal cleaned by sanding or scraping. For larger areas, remove loose lining and dirt, then roughen bare pipe surface by scratching or gouging with a small chisel to provide an anchor pattern for the epoxy. It is recommended that the polyethylene lining be stripped back by chiseling, cutting, or scraping about 1" to 2" into well adhered lined area before patching. Roughen an overlap of 1" or 2" of polyethylene lining in area to be epoxy coated. This roughening should be done with a rough grade emery paper (40 grit), rasp, or small chisel. Avoid honing, buffing, or wire brushing since these tend to make surface to be repaired too smooth for good adhesion.
4. With area to be sealed or repaired absolutely clean and suitably roughened, apply a thick coat of a two part coal tar epoxy such as Madewell 1104 or equal. The heavy coat of epoxy must be worked into the scratched surface by brushing. Mixing

and application procedure for the epoxy must follow the epoxy manufacturer's detailed instructions. If a two component coal tar epoxy system is not available, contact the manufacturer's representative for information on availability of a repair kit.

5. It is important that entire freshly cut exposed metal surface of the cut pipe be coated. To ensure proper sealing, overlap at least one inch of the roughened polyethylene lining with this two part epoxy system.

H. Installing Ductile Iron Pipe

Ductile iron pipe shall be delivered, handled and installed in accordance with the applicable provisions of AWWA Standard C-600. Great care shall be taken to prevent the pipe coating from being damaged, particularly on the inside of the pipes and fittings and any such damage shall be remedied as required. All pipe and fittings shall be carefully examined by the Contractor for defects just before laying.

With regard to ductile iron pipe laid underground, excavation and backfilling shall be in accordance with MAG SPECIFICATION 601: TRENCH EXCAVATION, BACKFILLING AND COMPACTION and the amendments and supplements thereto set forth in these specifications. No pipe shall be laid on blocking. All runs of mechanical joint or push-on rubber gasket joint pipe underground shall be installed with one quarter (1/4) inch space between the spigot end of the pipe and the shoulder of the socket to allow for expansion.

No pipe or fittings shall be laid which is known to be defective. If any defective pipe is discovered after having been laid, it shall be removed and replaced with a sound pipe or fitting in a satisfactory manner by the Contractor at his own expense. All pipes and fittings shall be thoroughly cleaned before they are laid and shall conform to the lines and grades shown on the drawings.

At the end of each day's work and at any time during a work day when pipe laying is stopped, the ends of the pipe shall be effectively plugged to prevent the entrance of any foreign matter of any kind, including outside water, into the pipe.

I. Bedding Requirements

The granular bedding material shall be crushed stone or crushed gravel meeting the following requirements:

<u>Nominal Pipe Size</u>	<u>AASHTO M43 Size</u>
6" to 14"	67, 7, or 8
16" to 30"	6 or 67
Greater than 30"	57 or 67

Prior to pipe installation, the initial granular bedding shall be spread the full width of the trench bottom and carefully brought to grade along the entire length of pipe to be installed. After the pipe is laid, aligned, and graded the granular material shall then be brought up halfway on the pipe for the full width of the trench. The granular material shall be so placed as to fill the space under the lower part of the pipe by slicing under the haunches with a shovel.

HIGH DENSITY POLYETHYLENE PIPE

A. PE Pipe

PE pipe shall conform to ASTM F 894 and shall be manufactured by the continuous winding of extruded material upon a mandrel to produce the nominal diameter. Pipe shall be ribbed for stiffness and shall have integral bell and spigot joints. Ribs shall be completely fused into the pipe wall. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign materials, blisters or other faults. Pipe shall be a minimum RSC Class 63 as defined in ASTM F 894.

B. PE Plastics

PE plastics shall conform to ASTM D 1248. They shall be made of PE resins classified Type III, Category 5, Grade P34. PE resins shall contain antioxidants and be stabilized with carbon black against ultraviolet degradation to provide protection during processing and weather exposure. PE resin compounds shall have a resistance to environmental stress cracking as determined by the procedure detailed in ASTM D 1693 Condition C with sample preparation by Procedure C of ASTM D 1928 for not less than 200 hours. All pipe shall be made from virgin material or from clean rework material obtained from the manufacturer's own production of the same formulation provided the rework material makes up less than 10 percent of the total material used and provided the pipe produced meets all the requirements of this specification.

C. Pipe And Fittings

Pipe and fittings shall meet the requirements of ASTM D 3350. Rejected pipe and fittings shall be removed from the project. No repairs of pipe or fittings will be allowed; undamaged lengths of straight pipe may be salvaged by neatly sawing off the damaged portion of the pipe.

D. Fittings

Fittings shall be factory made and provided with joints of proper design to connect to the pipe or approved adapters shall be furnished to connect the pipe to the fittings.

E. Joints

Pipe shall be provided with integral bell and spigot joint rings designed to be field joined using an elastomeric gasket conforming to ASTM F 894. Thermal weld joints will not be acceptable. The ring stiffness constant of any bell and spigot joint, when assembled, shall be at least equal to but not more than twice the ring stiffness constant of the adjacent pipe.

Testing of HDPE sewer pipe joints, when so directed by the Engineer, shall be made in accordance with ASTM F 894 for gasketed joints, with modification as specified below. All equipment necessary to conduct the pipe joint test shall be provided by the Contractor.

1. Test Specimens. The Engineer or his authorized representative may initially and periodically select random sewer pipe for test purposes. The test shall be performed on not less than two specimens and not more than 1 percent of the total pipe length of each size and joint type required for the project.

F. Gaskets

Gaskets shall be molded into a circular form or extruded to the proper section then spliced into a circular form. Gaskets shall meet the requirements of ASTM F 477. The basic polymer shall not be natural rubber.

The lubricant used for assembly of gasket joints shall have no detrimental effect on the gasket or on the pipe.

G. Pipe Dimension

The average inside diameter of the pipe, including the diameter in the spigot sections shall meet the requirements given in Table 1 of ASTM F 894. The minimum wall thickness of the waterway of the pipe shall be as follows:

<u>Nominal Pipe Size</u>	<u>RSC Class</u>	<u>Wall Thickness</u>
18"	63	0.19"
21"	63	0.19"

Standard pipe laying length, measured from the bottom of the bell to the top of the spigot, shall be 20 feet with a tolerance of ± 2 inches. Connections to manhole structures shall be made at the exact stations shown on the drawings.

H. Identification

Pipe shall be permanently imprinted with the manufacturer's brand name, pipe size, pipe class and any other identification for tracing pipe quality to raw material source. All pipe spigots shall have a "home" mark to facilitate joint closure.

I. Certifications

Six (6) copies of a manufacturer's certificate that the PE material and pipe were manufactured and tested in accordance with ASTM F 894 shall be furnished to the Engineer prior to the installation of the pipe. A report of the test results shall also be furnished.

J. Inspections

All pipe and fittings will be inspected by the Engineer or his authorized representative immediately prior to installation and all rejected pieces must be completely removed from the project. Pipe acceptable to the Engineer shall be substituted for rejected pieces at the Contractor's expense.

K. Transportation And Storing HDPE Pipe

Care shall be taken during transporting of the high density polyethylene pipe (HDPE) to ensure that the binding and tie-down methods do not cut the pipe in any manner. Pipe deformed or otherwise damaged during shipping or storage shall be rejected. HDPE pipe stored on the job site shall be stored on a level surface and covered with canvas or other opaque material to protect it from sunlight. Air circulation shall be provided under the covering. Only that amount of pipe which is to be laid shall be strung out along the trench each day.

L. Handling HDPE Pipe

Hoist pipe with mechanical equipment using a cloth belt sling or a continuous fiber rope which avoids scratching the pipe. Do not use a chain or wire rope sling.

M. Installing HDPE Pipe

Installation of high density polyethylene pipe shall conform to the following requirements of these Technical Provisions.

Trench width at the ground surface may vary with and depend upon depth, type of soils, and position of surface structures. The minimum clear width of the trench sheeted or unsheeted measured at the springline of the pipe shall be in accordance with MAG Subsection 601.2.2 (Table 601-1).

Pipe installed in unsupported trenches whose maximum width at the top of the pipe does not exceed 2 pipe diameters on each side of the pipe shall have the bedding material placed and compacted all the way to the trench wall. When the trench width is equal to or exceeds 2 pipe diameters at the top of the pipe, the bedding material shall be placed and compacted to a point at least 2 pipe diameters from each side of the pipe.

Pipe installed in supported trenches shall have the compacted bedding material extend to the trench wall, to sheeting or shoring left in place, or to a point at least 2 pipe diameters from each side of the pipe, whichever is less.

If the Contractor uses movable trench support, the inside clear width of the box or shield shall permit the minimum trench width requirements to be satisfied. When using movable trench support care shall be exercised not to disturb the pipe location, jointing or its embedment. Removal of any trench protection below the top of the pipe and within 2 pipe diameters of each side of the pipe shall be prohibited after the pipe embedment has been compacted.

The required bedding for HDPE sewer pipe shall be crushed stone or crushed gravel compacted to 12 inches over the top of the pipe. The material shall be shovel sliced under the haunches of the pipe to provide adequate side support. Flooding or jetting will not be permitted as a consolidation method for the HDPE bedding. Compaction densities for bedding material and trench backfill shall be in accordance with MAG Section 601.4.4 Table 601-2 and any amendments thereto in these Technical Provisions.

Manhole adapter rings or couplings recommended by the HDPE pipe manufacturer, and approved by the Engineer shall be used for connecting high density polyethylene sewer pipe to manholes and other structures.

No sooner than thirty (30) days after completion of placement and densification of backfill, 100 percent of all HDPE sewer pipe installed on the project shall be tested for deflection. Maximum allowable deflections shall be governed by the mandrel requirements stated herein. The mandrel shall be pulled through the pipe by hand to ensure that maximum allowable deflections have not been exceeded. If the mandrel fails to pass, the pipe will be deemed to be overdeflected. Prior to use, the mandrel shall be certified by the Engineer of his authorized representative.

Mandrels shall have the following requirements:

1. Be a rigid, non-adjustable, odd-numbering-leg (9 legs minimum) mandrel having an effective length not less than its nominal diameter.
2. Have a minimum diameter at any point along the full length as follows:

<u>Pipe Material</u>	<u>Nominal Size</u>	<u>Minimum Mandrel Diameter</u>
HDPE-ASTM F 894 (RSC 63)	18"	16.91

3. Be fabricated of steel, be fitted with pulling rings at each end, be stamped or engraved on some segment other than a runner indicating the pipe size and mandrel O.D.

Installed pipe found to be overdeflected shall be uncovered and, if not damaged, reinstalled. Damaged pipe shall not be reinstalled but shall be removed from the work site. Reinstalled pipe or replaced pipe shall be retested for deflection. The use of a rerounder to reduce or cure any overdeflection will not be permitted.

All costs incurred by the Contractor attributable to mandrel and deflection testing, including any delays, shall be borne by the Contractor at no cost to the District.

Before acceptance, lines will be lamped 100% and closed circuit TV inspection will be done. The Contractor shall notify the Engineer at least forty-eight (48) hours prior to completion of the backfilling so that the inspection may be scheduled. The inspection will be accomplished by the City of Peoria Wastewater Department. The District will pay for the initial inspection. Any additional inspections required, due to failure of the initial inspection, shall be paid for by the Contractor.

The Contractor shall provide the Engineer with certified as-built measurements, both horizontal and vertical, for the pipe flow lines and manholes.

Payment for all work under this item will be made at the contract unit price bid per linear foot for ITEM 615-1: 20" DIAMETER DUCTILE IRON PIPE, ITEM 615-2: 20" DIAMETER DUCTILE IRON PIPE (Encased per MAG Detail 402), and for ITEM 615-3: 18" DIAMETER HDPE PIPE complete in place including excavation and compaction in native soil and soil-cement.

SECTION 618 - DRAINAGE PIPE AND STRUCTURE: The construction of drainage pipe shall include trench excavation, placement of pipe materials, backfill, compaction, pipe collars and incidentals associated with the installation of concrete pipe and corrugated metal pipe for drainage as delineated on the construction drawings. The installation of the concrete pipe, concrete headwall and outlet gate shall be in conformance with MAG Standard Specifications Sections 618, 505, 515 and 770 respectively.

The installation of the corrugated metal pipe shall be in conformance with MAG Standard Specifications Section 621. The Contractor shall be responsible for installing the pipe under the temporary detour and maintaining them for the duration of the detour. Upon removal of the detour, the Contractor shall also remove the metal pipe. The salvaged pipes shall be delivered to the District's field stores located at 99th Avenue and Northern Avenue or any location within a 15 mile radius as directed by the Engineer.

Measurement and payment for pipe shall be by the linear foot measured to the nearest whole foot with appurtenant existing structures being measured and paid for under clearing and grubbing.

SECTION 625 - MANHOLE CONSTRUCTION: The work under this section consists of the construction of three sanitary sewer manholes at the locations shown on the plans.

Included in the manhole construction is the installation of pipe stubouts at each manhole at the elevations shown to accommodate the installation of future sewer lines. The pipe material for the stubouts shall be High Density Polyethylene (HDPE) pipe. Each stubout shall be plugged after installation.

Payment for all work under this item will be made at the contract unit price bid each for ITEM 625 - SANITARY SEWER MANHOLE, complete in place including excavation, compaction and providing and installing the HDPE pipe stubouts.

SECTION 630 - TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES: The fire hydrant on the south side of 83rd Avenue, as shown on Sheet 15 of the contract drawings, shall be relocated by the Contractor to a point outside the limits of the detour construction. Subsequent to removal of the detour, the hydrant shall be relocated again by the Contractor to or near its original position. The final location of the hydrant will be determined during construction.

The Contractor shall notify the City of Peoria Fire Department at 979-7067, 48 hours prior to starting relocation work.

Payment for all work under this section, including labor, equipment and material will be made at the unit price bid each for ITEM 630-3: RELOCATE FIRE HYDRANT.

GUARANTEE: The Contractor shall guarantee the structures for one year against faulty materials, faulty workmanship, and failure to meet the specification 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.

Dave Davis FNF

Jan 15 notice to proceed

270 days

* La Lee Dixon first pertaining to project
construction meetings every Wednesday @ 9:00

PRECONSTRUCTION CONFERENCE

Project:

Contract Number:

Owner:

Engineer:

Contractor:

1.0 INTRODUCTIONS OF:

- 1.1 Owner Personnel
- 1.2 Engineer Personnel
- 1.3 Contractor Personnel
- 1.4 Concerned Entities' Personnel
- 1.5 List of Key Personnel and Positions
 - 1.5.1 Name, Firm, Emergency (24 hr.) No.
- 1.6 Subletting of Contracts

2.0 ADMINISTRATION

- 2.1 Notice to Proceed
- 2.2 Purpose of preconstruction conference
- 2.3 Description of work
- 2.4 Contract time
- 2.5 Progress schedule (construction schedule)
- 2.6 Permits
- 2.7 Project documents:
 - 2.7.1. Change orders
 - 2.7.2. Time extensions
 - 2.7.3. Progress payments
 - 2.7.4. Insurance and bonds
 - 2.7.5. Overtime work

3.0 CONTROL OF WORK AND COORDINATION

- 3.1 Communication
 - CONTRACTOR-CONTRACT MANAGER-OWNER
- 3.2 Submittals/shop drawings/correspondence *3 initial 7 final*
- 3.3 Cooperation with utilities and other contractors
- 3.4 Weekly construction coordination meetings *9:00 on wednesdays*
- 3.5 Safety and Sanitary requirements
 - 3.5.1 Accidents reports
- SAFETY VIOLATIONS CAN RESULT IN IMMEDIATE SHUTDOWN
- 3.6 Traffic control *Ron West city of peoria.*
- 3.7 Alcohol/Drug use
- 3.8 Guarantee of work

4.0 TECHNICAL

4.1 Testing-types and quantities

4.2 Inspections

4.2.1 Inspector's duties

4.2.2 Inspection of work

4.2.3 Surveying

4.2.4 Additional and or corrective work and acceptance

4.3 Material compliance/substitutes

5.0 PUBLIC

5.1 Safety

5.2 Convenience

5.3 Noise/Dust Control

5.4 Work hours 8-4:30 m-f

5.5 Property damage → FNF

5.6 Complaints

ADDENDUM NO. 2

DATE: DECEMBER 7, 1989

FCD Contract No. 89-48

Page 1 of 2

To Contract Documents

ENTITLED: 83rd AVENUE BRIDGE OVER SKUNK CREEK
OWNER: Flood Control District of Maricopa County

The above documents are herein modified. The provisions of said documents applicable to these modifications remain unchanged unless specifically indicated otherwise herein. This addendum forms a part of the contract documents and modifies them as follows:

TO INVITATION TO BID AND BIDDING SCHEDULE:

BIDDING SCHEDULE, remove and replace page 8 of 26. Note specifically Item 725.2.

TO CONSTRUCTION SPECIAL PROVISIONS:

SECTION 212-1 - SOIL CEMENT BANK PROTECTION: Page SP-17

Delete items 7.1 and 7.2 in their entirety and replace with the following:

"7.1 Measurement: Soil cement work shall be measured by (1) the number of cubic yards of compacted-in-place soil cement bank protection channel lining between the limits shown by the specified lines, grades, and cross-sections shown on the plans and (2) the number of tons of cement incorporated into the soil cement used for tests and for the bank protection channel lining between the limits shown by the specified lines, grades, and cross-sections shown on the plans. No payment shall be made for any waste or excess placement of cement and/or soil cement by the contractor during the handling, mixing, placing, etc. operations.

7.2 Payment: Soil cement work shall be paid for at the contract unit price per cubic yard of compacted-in-place soil cement and at the contract unit price per ton of cement furnished, multiplied by the respective quantities obtained in accordance with subsection 212.1.7.1. Such payment shall constitute full reimbursement for performing all work and for furnishing all equipment, labor, and materials necessary to complete the soil cement bank protection channel lining, dewatering, trench excavation, watering, mixing, placing, compacting, curing, grading and disposal of material excavated from the Skunk Creek channel, inspection and testing assistance and all other incidental operations.

Page SP-22

Delete the fourth paragraph on Page SP-22 in its entirety.

ADDENDUM NO. 2

DATE: DECEMBER 7, 1989

FCD Contract No. 89-48

Page 2 of 2

SECTION 212-2 - DROP STRUCTURES: Page SP-22

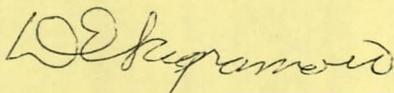
Delete the fifth paragraph on page SP-22 in its entirety and replace with the following:

"Payment for all work under this item will be made at (1) the contract unit price per linear foot installed complete-in-place, including soil cement, construction excavation, backfill and compaction, upstream and downstream cobble, scour protection beds, dewatering, removal and replacement of grouted riprap lining, and removal and disposal of excess materials and (2) for the number of tons of cement used for tests and the completed-in-place soil cement at the contract unit price for cement."

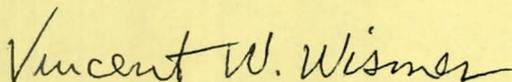
TO CONSTRUCTION DRAWINGS:

Plan Sheet No. 29

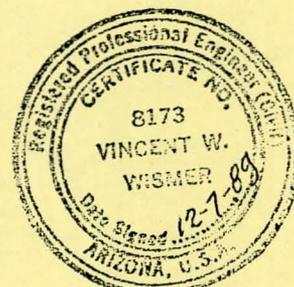
Change Girder Flange Dimension from 3'-4" TO 3'-6". Also change 1'-8" TO 1'-9".



D.E. Sagramoso, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County



Vince W. Wismer
Hoffman-Miller Engineers, Inc.



(SEAL)

BIDDING SCHEDULE

PROJECT: 83rd Avenue Crossing Skunk Creek

CONTRACT: FCD 89-48

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
615-1	20" Diameter Ductile Iron Pipe (DIP)	120	LF			
615-2	20" Diameter DIP Encased per MAG Det. 402	320	LF			
615-3	18" Diameter High Density Polyethylene Pipe	424	LF			
618-1	24" Diameter RGRCP	182	LF			
618-2	54" Diameter RGRCP	70	LF			
618-3	Concrete Encased 24" Diameter RGRCP	10	LF			
619	12" Diameter PVC Pipe (Schedule 40)	50	LF			
621	48" Diameter CMP	500	LF			
623	Concrete Headwall for 24" RCP	1	EA			
623-1	Concrete Headwall and Trash Rack for 54" RCP	1	EA			
625	Sanitary Sewer Manhole MAG Det. 422	3	EA			
630-1	Adjust Water Valve MAG Detail 391-1-A	4	EA			
630-2	Adjust Water Valve MAG Detail 391-1&2-B	1	EA			
630-3	Relocate Fire Hydrant	1	EA			
725.2	Cement, ASIM C150, Type II	6,400	Ton			

TOTAL BID AMOUNT: _____

DATE: November 28, 1989

FCD Contract No. 89-48

Page 1 of 2

To Contract Documents

ENTITLED: 83RD AVENUE BRIDGE OVER SKUNK CREEK
OWNER: Flood Control District of Maricopa County

The above documents are herein modified. The provisions of said documents applicable to these modifications remain unchanged unless specifically indicated otherwise herein. This addendum forms a part of the contract documents and modifies them as follows:

TO INVITATION TO BID AND BIDDING SCHEDULE:

INVITATION TO BID, remove and replace page 3 of 26, PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES.

BIDDING SCHEDULE, remove and replace page 6 of 26. Note specifically Items 212-2 and 215.

TO CONSTRUCTION SPECIAL PROVISIONS:

SECTION 215 - EARTHWORK FOR OPEN CHANNELS: Page SP-23

Change first paragraph on page SP-23 as follows:

"Material excavated under this item may be used for roadway, detour embankment, and channel bank construction, provided that it meets the requirements of SECTION 210 - BORROW EXCAVATION. Material that is determined to be unsuitable for use in roadway, detour embankment, and channel bank construction shall be disposed at the designated spoil areas shown on the plans."

SECTION 502 - CAISSON CONSTRUCTION: Page SP-30

Delete seventh paragraph from top of page SP-30 in its entirety.

SECTION 615 - SEWER LINE CONSTRUCTION: Page SP-40

Change fourth paragraph from top of page SP-40 as follows:

"Before acceptance,... The inspection will be accomplished by the City of Peoria Engineering Department."

SECTION 618 - DRAINAGE PIPE AND STRUCTURE: Page SP-40

Add the following to the end of the first paragraph under this section:

"...respectively, and the plug shall be in accordance with MAG Standard Detail 427."

SECTION 630 - TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES: Page SP-41

Change second paragraph in Section 630, page SP-41 to read as follows:

"The Contractor shall notify the City of Peoria Engineering Department..."

DATE: November 28, 1989

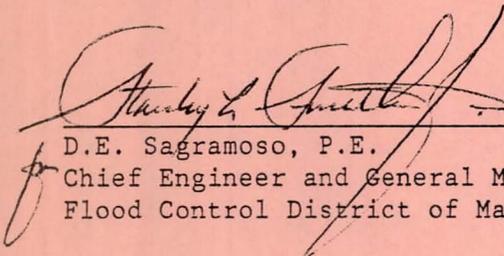
FCD Contract No. 89-48

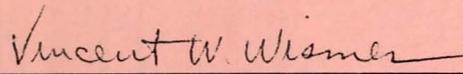
Page 2 of 2

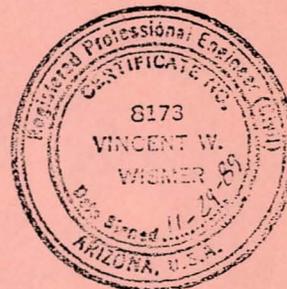
TO CONSTRUCTION DRAWINGS:

Remove sheets 2, 5, 7, 9, and 11 and replace with revised sheets 2, 5, 7, 9, and 11.

Add sheets 41 and 42, designated Spoil Sites.


STANLEY L. SMITH JR., P.E.
DEPUTY CHIEF ENGINEER
D.E. Sagramoso, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County


Vince W. Wismer
Hoffman-Miller Engineers, Inc.



(SEAL)

PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
27,950	C.Y.	Soil-Cement Bank Protection
590	L.F.	Soil-Cement Drop Structure
117,500	C.Y.	Channel Excavation
900	L.F.	Concrete Caisson (7' Diameter)
573	L.F.	Concrete Caisson (5' Diameter)
1,392	C.Y.	Class "A" Concrete
1,030	C.Y.	Class "AA" Concrete
1	EA.	Catch Basin, MAG Detail 537, Type G Single Grate
486,445	LB.	Reinforcing Steel (Gr. 60)
36	EA.	Precast Prestressed Conc. Beams - Type V (Pretension Alternate)
36	EA.	Precast Prestressed Conc. Beams - Type V (Post-tension Alternate)
1,023	L.F.	Aluminum Handrail

BIDDING SCHEDULE

PROJECT: 83rd Avenue Crossing Skunk Creek

CONTRACT: FCD 89-48

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
212-1	Soil Cement Bank Protection	27,950	CY			
212-2	Soil Cement Drop Structure	590	LF			
215	Channel Excavation	117,500	CY			
301	Subgrade Preparation	6,523	SY			
310	Aggregate Base Course	1,115	TON			
315	Bitum. Prime Coat	10.5	TON			
321-1	Asphalt Conc. (C-3/4)	1,569	TON			
321-2	Bitum. Tack Coat	1.2	TON			
321-3	Preservative Seal (Contingent Item)	275	GAL			
321-4	Blotter Material (Contingent Item)	2	TON			
340	Curb, Type "A" (MAG Det. 222)	235	LF			
350	Remove Exist. Impr.	1	LS			
401	Traffic Control	1	LS			
405	Survey Marker (MAG Det. 120-1); Type "A"	1	EA			
415-1	Guardrail, W/Beam Single Face	275	LF			

FCD Contract 89-48
83RD Avenue Bridge Crossing Skunk Creek
Bid Opening: December 14, 1989 - 2:00 p.m.
\$35.00

- | | | | |
|----|---|----------|----------|
| 1. | Tanner Construction
3888 E. Broadway Road
Phoenix, AZ 85040
437-7878
Estimating Department | (2 sets) | \$70.00 |
| 2. | Tanner Companies - TPAC Division
P.O. Box 20128
Phoenix, AZ 85036
262-1365/262-1360
Richard "Dick" Ware | | \$35.00 |
| 3. | R. G. Johnson Contracting
500 W. First Street
Tempe, AZ 85280
894-0946
Bob Johnson | | \$35.00 |
| 4. | MGC Contractors, Inc.
411 South Mill, Ste. 205
Tempe, AZ 85251
968-7243
968-0442 FAZ
Bob Murch | | \$35.00 |
| 5. | Buesing Corporation
5035 S. 33rd Street
Phoenix, AZ 85040
276-5555
276-1574 FAX
Jim Beito | | \$35.00 |
| 6. | M A C Construction
P. O. Box 23079
Phoenix, AZ 85063
269-3278
Gale Myers | | \$35.00 |
| 7. | F N F Construction, Inc.
1921 S. Alma School Rd., Ste 101
Mesa, AZ 85202
345-7546
Gary Crisp | (3 sets) | \$105.00 |

- | | | | |
|-----|---|----------|----------|
| 8. | Hunter Contracting
P. O. Box 900
Gilbert, AZ 85234
892-0521
Steve Padilla | | \$35.00 |
| 9. | Nesbitt Contracting Co., Inc. (3 sets)
100 S. Price Road
Tempe, AZ 85281
894-2831
Mary Lou | | \$35.00 |
| 10. | F.W. Dodge | (2 sets) | N/C |
| 11. | Pulice Construction
2033 W. Mountain View Road
Phoenix, AZ 85021
944-2241
870-3395 FAX
Tom Meeks | (3 sets) | \$105.00 |
| 12. | CS Construction
22023 N. 20th Avenue
Phoenix, AZ 85027
256-7943
780-1270 FAX
Mike Borden | | |
| 13. | Sun Land Steel, Inc.
325 E. Southern, Ste. #4
Tempe, AZ 85282
921-0856
James Perry | | \$35.00 |
| 14. | Bentson Contracting Co.
2525 W. Berly
Phoenix, AZ 85021
944-8880
Tosh | | \$35.00 |
| 15. | Swengel-Robbins
7418 E. Helm Drive
Scottsdale, AZ 85260-2382
998-3950
951-0108 FAX
Roger Carter | | \$35.00 |
| 16. | Construction 70, Inc.
P. O. Box 1663
2337 N. Country Club Dr.
Mesa, AZ 85201
898-7070
Ed King | | \$35.00 |

17. Arizona Rebar, Inc. \$35.00
P. O. Box 6472
Phoenix, AZ 85005
254-0091
Bill Boren
18. Meadow Valley Contractors, Inc. (2 sets) \$70.00
2810 S. 24th Street, #108
Phoenix, AZ 85034
731-9021
731-9027 FAX
Sherry James
19. JWJ Contracting Co., Inc. \$35.00
4525 E. University
Phoenix, AZ 85034
967-7815
Lori Johnson
20. Sundt Corp. (2 sets) \$70.00
P. O. Box 26685
Tucson, AZ 85726
748-7555
747-9673 FAX
Steve Seplak
21. Judd Drilling, Inc. \$35.00
1927 Arnold Industrial Highway
Concord, CA 94520
415-825-4212
Dave Judd
22. LBG Contracting, Inc. \$35.00
P. O. Bo 25991
Tempe, AZ 85285-5991
252-5584
Joe Fry
23. Val-Tech, Inc. \$35.00
1889 E. Camelback Rd., Ste A
Phoenix, AZ 85016
265-6417
234-3606 FAX
Tim Schoonhoven
24. Interwest Contracting, Inc. \$35.00
P. O. Box 1057
Mesa, AZ 85201
968-2500
Bob Ramage

25. Wheeler Construction, Inc.
716 E. Rose Garden Lane
P. O. Box 26840
Phoenix, AZ 85068
254-3910
Robert Wheeler

\$35.00