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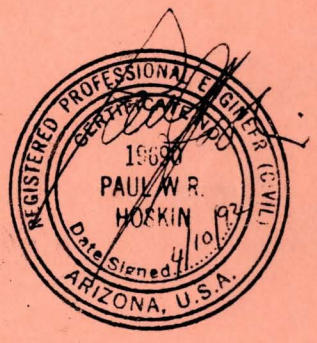
CONSTRUCTION SPECIFICATIONS
FOR
NEW RIVER CHANNELIZATION
BETHANY HOME ROAD TO OLIVE AVENUE
FCD CONTRACT NO. 91-36

Prepared by:

Coe & Van Loo Consultants, Inc.
4550 North 12th Street
Phoenix, Arizona 85014



Prepared for:

Flood Control District of Maricopa County
and

Recommended by: Edward A. Raleigh Date: 4/10/92
Engineering Div. Chief

Approved by: Stanley L. Smith Jr. Date: 4-10-92
Acting Chief Engineer/Gen. Manager

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

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ATTENTION

ALL PROSPECTIVE BIDDERS

A.R.S. Sec. 34-201(A)(3) requires that every bid be accompanied by a certified check, cashier's check or surety bond in the amount of not less than a full five percent (5%) value of the bid.

Bid bonds for less than the full five percent (5%) value of the bid amount as required by A.R.S. 34-201(A)(3) will not be accepted (such as the AIA Form of Bond). Those bids will therefore e considered nonresponsive.

Please take note and submit your bids accordingly.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT 91-36

NEW RIVER CHANNELIZATION
BETHANY HOME ROAD TO OLIVE AVENUE

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(Area to left reserved for Engineer's Seal)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION TO BID

BID OPENING DATE: May 14, 1992

LOCATION:

This project is located at New River, 1/2 mile north of Olive Avenue south to Bethany Home Road, between 99th and 107th Avenues, within the Cities of Glendale and Peoria.

PROPOSED WORK:

The proposed work consists of channelization of 3 1/2 miles of New River including: removal of landfill and construction debris, 1/4 mile two lane paved detour road, inlet structures, and bridge invert protection.

BIDS:

SEALED BIDS for the proposed work will be received by the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009 until 2:00 p.m. (Phoenix time) on the above date and then publicly opened and read at 2801 West Durango Street, Phoenix, Arizona 85009. No bids will be received after the time specified for bid opening. All bids must be submitted on proposal forms furnished by the Flood Control District and included in the Proposal Pamphlet. The Board of Directors reserves the right to reject any and all bids and to waive any informality in any bid received.

ELIGIBILITY OF CONTRACTOR:

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

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

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

CONTRACT TIME:

All work on this Contract is to be completed within three hundred sixty five (365) calendar days after date of Notice to Proceed.

MBE/WBE PARTICIPATION:

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

PRE-BID CONFERENCE:

A pre-bid conference will be held on April 27, 1992 at 1:00 p.m. in the Flood Control District conference room, 2801 West Durango Street, Phoenix, Arizona 85009. It is in the best interest of prospective bidders to attend the Pre-bid Conference.

Questions or items for clarification may be addressed to the Chief, Contracting Branch, in writing, at least ten (10) days prior to bid opening date. Where appropriate, any answers or clarifications affecting the cost may be addressed to all bidders in an addendum. 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, 2801 West Durango Street, Phoenix, Arizona 85009 upon payment of $65.00 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 $10.00 for first class U.S. postage and handling. The total $75.00 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, 2801 West Durango Street, Phoenix, Arizona 85009.

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

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PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

QUANTITY	UNIT	DESCRIPTION
254,172	CY	Embankment Fill
2,189,825	CY	Channel Excavation
289,105	CY	Soil Cement Bank Protection & Grade Control Structure
31,618	TON	Cement for Soil Cement
6,707	TON	Fly Ash for Soil Cement
32,224	LF	Safety Handrail

BIDDING SCHEDULE

A-1

Quantities for this project have changed. The following bid item quantities shall be adjusted to the totals shown below. The net change, plus or minus, is indicated in parenthesis.

Item No.	Descriptions	Adjusted Quantity	Unit	Change
221-1	Soil Cement Bank Protection and Grade Control Structure	289,282	CY	(+177)
221-2	Cement for Soil Cement	43,428	TON	(+11,810)
221-3	Fly Ash for Soil Cement	9,212	TON	(+2,505)
345	Raise Existing 36" Sewer Manhole	2	EA.	(+2)

PROPOSAL

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

Gentlemen:

The following Proposal is made for constructing New River Channelization, Bethany Home Road to Olive Avenue in the County of Maricopa, State of Arizona.

The following Proposal is made on behalf of

_____

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

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

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

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

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

The Undersigned further proposes to execute the Contract Agreement and furnish satisfactory Bonds and Sureties within ten (10) days of receipt of Notice of Proposal acceptance, **TIME BEING OF THE ESSENCE.** The Undersigned further proposes to begin work as specified in the Contract attached hereto, and to complete the work within 365 **calendar days** from the effective date specified in the Notice to Proceed, and maintain at all times a Payment and Performance Bond, approved by the Board of Directors, each in an amount equal to one hundred percent of the contract amount. This Bond shall serve not only to guarantee the completion of the work on the part of the Undersigned, but also to guarantee the excellence of both workmanship and material and the payment of all obligations incurred, said Bonds and Sureties to be in full force and effect until the work is finally accepted and the provisions of the Plans, Specifications, and Special Provisions fulfilled.

A Proposal Guaranty in the amount and character named in the Invitation to Bid is enclosed amounting to not less than 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 its Proposal, if the Proposal is accepted and there should be failure on the part of the Undersigned to execute the Contract and furnish satisfactory Bonds and Sureties as herein provided, the Flood Control District of Maricopa County in either of such events, shall be entitled and is hereby given the right to retain the said Proposal Guaranty as liquidated damages.

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

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

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

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

A-3

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue
CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
201-1	Clearing and Grubbing	1	LS	Four Hundred Thousand and 00/00 dollars	400,000.00	400,000.00
201-2	Tree Removal (>12" Dia.)	35	EA			
202	Mobilization	1	LS	Four Hundred Thousand and 00/00 dollars	400,000.00	400,000.00
205	Roadway Excavation	1	LS			
211-1	Disposal Site Fill-95, Fill Site B	134,837	CY			
211-2	Embankment Fill	254,172	CY			
211-3	Fill Construction L.M. (stockpile)	3,500	CY			
211-4	Fill Construction C.I.P. (Road Embkmnt)	16,275	CY			
	Landfill Excavation and Disposal of					
	Construction Debris					
212-1	First 50,000 CY	50,000	CY			
212-2	Over 50,000 CY	100,000	CY			
	Landfill Excavation and Disposal of					
212-3	Organic Material	5,000	TON			
212-4	Tires	10	TON			
212-5	Asphalt, off-site disposal	45,000	TON			
215-1	Channel Excavation	2,189,825	CY			
215-2	Drainage Excavation	1,535	CY			

BIDDING SCHEDULE

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PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

CONTRACT: FCD 91-36

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202	Mobilization	1	LS	Four Hundred Thousand and 00/00 dollars	400,000.00	400,000.00
205	Roadway Excavation	1	LS			
211-1	Disposal Site Fill-95, Fill Site B	134,837	CY			
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220-1	Loose Rip Rap	9,605	CY			
220-2	Grouted Rip Rap	170	CY			
220-3	Grout Existing Gabions	900	SY			
220-4	Rip Rap Construction	60	CY			
221-1	Soil Cement Bank Protection and Grade Control Structure	289,282	CY			
221-2	Cement for Soil Cement	43,428	TON			
221-3	Fly Ash for Soil Cement	9,212	TON			
310	4" A.B.C. Maintenance Road	15,941	SY			
321-1	Sawcut, Remove & Replace Ex. Pavement	91	SY			
321-2	Asphalt Pavement on Base Course	8,145	SY			
345	Raise Existing 36" Sewer Manhole	2	EA			
350-1	Removal of Existing Improvements	1	LS			
350-2	Pavement Removal	6,485	SY			
401	Traffic Control	1	LS			
405	Survey Monument	6	EA			
415	Guardrail MAG 135-1	694	LF			
420	6' Chain Link Fence (from salvage)	175	LF			

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221-1	Soil Cement Bank Protection and Grade Control Structure	289,105	CY			
221-2	Cement for Soil Cement	31,618	TON			
221-3	Fly Ash for Soil Cement	6,707	TON			
310	4" A.B.C. Maintenance Road	15,941	SY			
321-1	Sawcut, Remove & Replace Ex. Pavement	91	SY			
321-2	Asphalt Pavement on Base Course	8,145	SY			
350-1	Removal of Existing Improvements	1	LS			
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505-1	8" Thick Conc. Bridge Protection	51,400	SF			
505-2	6" Thick Conc. Slope Protection	7,815	SF			
505-3	Concrete Jersey Barrier	1	LS			
505-4	Concrete Box Culvert (Sun City)	1	LS			
505-5	Concrete Box Culvert (Grand Drain)	1	LS			
505-6	60" Manhole Junction Structure	1	EA			
505-7	Headwall, Single, Inlet, 24"	1	EA			
505-8	Headwall, Single, Inlet, 30"	1	EA			
505-9	Headwall, Single, Inlet, 36"	4	EA			
505-10	Headwall, Single, Inlet, 42"	1	EA			
505-11	Headwall, Single, Inlet, 48"	1	EA			
505-12	Headwall, Double, Inlet, 48"	2	EA			
505-13	Headwall, Triple, Inlet, 48"	1	EA			
505-14	Headwall, Single, Outlet, 18"	2	EA			
505-15	Headwall, Single, Outlet, 24"	3	EA			
505-16	Headwall, Single, Outlet, 30"	1	EA			

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505-13	Headwall, Triple, Inlet, 48"	1	EA			
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505-17	Headwall, Single, Outlet, 36"	3	EA			
505-18	Headwall, Single, Outlet, 42"	1	EA			
505-19	Headwall, Single, Outlet, 48"	1	EA			
505-20	Headwall, Single, Outlet, 54"	1	EA			
505-21	Headwall, Single, Outlet, 60"	1	EA			
505-22	Headwall, Double, OUtlet, 48"	2	EA			
505-23	Headwall, Triple, Outlet, 48"	1	EA			
505-24	"Straight" Type Headwall, MAG 501-1	2	EA			
510-1	Irrigation Junction Box, MAG 504	2	EA			
510-2	S.R.P. Inlet/Outlet Headwall	2	EA			
515-1	Steel Posts	4	EA			
515-2	Debris Rack, Single, 24"	1	EA			
515-3	Debris Rack, Single, 30"	1	EA			
515-4	Debris Rack, Single, 36"	4	EA			
515-5	Debris Rack, Single, 42"	1	EA			
515-6	Debris Rack, Single, 48"	1	EA			

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505-21	Headwall, Single, Outlet, 60"	1	EA			
505-22	Headwall, Double, OUtlet, 48"	2	EA			
505-23	Headwall, Triple, Outlet, 48"	1	EA			
505-24	"Straight" Type Headwall, MAG 501-1	2	EA			
510-1	Irrigation Junction Box, MAG 504	2	EA			
510-2	S.R.P. Inlet/Outlet Headwall	2	EA			
515-1	Steel Posts	4	EA			
515-2	Debris Rack, Single, 24"	1	EA			
515-3	Debris Rack, Single, 30"	1	EA			
515-4	Debris Rack, Single, 36"	4	EA			
515-5	Debris Rack, Single, 42"	1	EA			
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505-19	Headwall, Single, Outlet, 48"	1	EA			
505-20	Headwall, Single, Outlet, 54"	1	EA			
505-21	Headwall, Single, Outlet, 60"	1	EA			
505-22	Headwall, Double, OUtlet, 48"	2	EA			
505-23	Headwall, Triple, Outlet, 48"	1	EA			
505-24	"Straight" Type Headwall, MAG 501-1	2	EA			
510-1	Irrigation Junction Box, MAG 504	2	EA			
510-2	S.R.P. Inlet/Outlet Headwall	2	EA			
515-1	Steel Posts	4	EA			
515-2	Debris Rack, Single, 24"	1	EA			
515-3	Debris Rack, Single, 30"	1	EA			
515-4	Debris Rack, Single, 36"	4	EA			
515-5	Debris Rack, Single, 42"	1	EA			
515-6	Debris Rack, Single, 48"	1	EA			

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

A-1

CONTRACT: FCD

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
515-7	Debris Rack, Double, 48"	2	EA			
515-8	Debris Rack, Triple, 48"	1	EA			
515-9	18" Slide Gate	2	EA			
520-1	Safety Handrail	32,224	LF			
520-2	Steel Fence Gate	11	EA			
520-3	Fence Gate - ADOT Standard 12.20	2	EA			
525	Hand Placed Mortar End Section	120	SF			
610-1	16" D.I.P. Water Line	536	LF			
610-2	Adjust Water Valve	4	EA			
618-1	18" R.G.R.C.P.	221	LF			
618-2	24" R.G.R.C.P.	204	LF			
618-3	30" R.G.R.C.P.	84	LF			
618-4	36" R.G.R.C.P.	221	LF			
618-5	42" R.G.R.C.P.	84	LF			
618-6	48" R.G.R.C.P.	256	LF			

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

A-1

CONTRACT: FCD

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
515-7	Debris Rack, Double, 48"	2	EA			
515-8	Debris Rack, Triple, 48"	1	EA			
515-9	18" Slide Gate	2	EA			
520-1	Safety Handrail	32,224	LF			
520-2	Steel Fence Gate	11	EA			
520-3	Fence Gate - ADOT Standard 12.20	2	EA			
525	Hand Placed Mortar End Section	120	SF			
610-1	16" D.I.P. Water Line	536	LF			
610-2	Adjust Water Valve	4	EA			
618-1	18" R.G.R.C.P.	221	LF			
618-2	24" R.G.R.C.P.	204	LF			
618-3	30" R.G.R.C.P.	84	LF			
618-4	36" R.G.R.C.P.	221	LF			
618-5	42" R.G.R.C.P.	84	LF			
618-6	48" R.G.R.C.P.	256	LF			

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
515-7	Debris Rack, Double, 48"	2	EA			
515-8	Debris Rack, Triple, 48"	1	EA			
515-9	18" Slide Gate	2	EA			
520-1	Safety Handrail	32,224	LF			
520-2	Steel Fence Gate	11	EA			
520-3	Fence Gate - ADOT Standard 12.20	2	EA			
525	Hand Placed Mortar End Section	120	SF			
610-1	16" D.I.P. Water Line	536	LF			
610-2	Adjust Water Valve	4	EA			
618-1	18" R.G.R.C.P.	221	LF			
618-2	24" R.G.R.C.P.	204	LF			
618-3	30" R.G.R.C.P.	84	LF			
618-4	36" R.G.R.C.P.	221	LF			
618-5	42" R.G.R.C.P.	84	LF			
618-6	48" R.G.R.C.P.	256	LF			

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

A-1

CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
618-7	54" R.G.R.C.P.	63	LF			
618-8	60" R.G.R.C.P.	124	LF			
618-9	24" Pipe Plug	2	EA			
618-10	54" Pipe Plug	1	EA			
618-11	18" Pipe Collar	1	EA			
618-12	54" Pipe Collar	2	EA			
618-13	60" Pipe Collar	1	EA			
630	Relocate Fire Hydrant	1	LS			
787-1	18" Flapgate	1	EA			
787-2	24" Flapgate	1	EA			
787-3	30" Flapgate	1	EA			
787-4	36" Flapgate	3	EA			
787-5	42" Flapgate	1	EA			
787-6	48" Flapgate	7	EA			

TOTAL BID AMOUNT: _____

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

A-1

CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
618-7	54" R.G.R.C.P.	63	LF			
618-8	60" R.G.R.C.P.	124	LF			
618-9	24" Pipe Plug	2	EA			
618-10	54" Pipe Plug	1	EA			
618-11	18" Pipe Collar	1	EA			
618-12	54" Pipe Collar	2	EA			
618-13	60" Pipe Collar	1	EA			
630	Relocate Fire Hydrant	1	LS			
787-1	18" Flapgate	1	EA			
787-2	24" Flapgate	1	EA			
787-3	30" Flapgate	1	EA			
787-4	36" Flapgate	3	EA			
787-5	42" Flapgate	1	EA			
787-6	48" Flapgate	7	EA			

TOTAL BID AMOUNT: _____

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue

CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
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618-12	54" Pipe Collar	2	EA			
618-13	60" Pipe Collar	1	EA			
630	Relocate Fire Hydrant	1	LS			
787-1	18" Flapgate	1	EA			
787-2	24" Flapgate	1	EA			
787-3	30" Flapgate	1	EA			
787-4	36" Flapgate	3	EA			
787-5	42" Flapgate	1	EA			
787-6	48" Flapgate	7	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.

SUBCONTRACTOR LISTING

As required in Section 102.6 of the Supplementary General Conditions, the following is a listing of Subcontractors and material suppliers that are to be used in the event the undersigned should enter into contract with the Owner. This is not an exhaustive or inclusive list.

_____

_____

_____

_____

_____

(Signature) _____

SURETY BOND

KNOW ALL MEN BY THESE PRESENTS:

That we,_____, as Principal, (hereinafter called the Principal), and the_____ _____, a corporation duly organized under the laws of the State of _____, as Surety, (hereinafter called the Surety), are held and firmly bound unto the Flood Control District of Maricopa County as Obligee, in the sum of five percent (5%) 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 91-36; New River Channelization, Bethany Home Road to Olive Avenue.

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., 1992.

_____
Principal

_____
Title

Witness:

_____

_____
Surety

_____
Title

Witness:

_____

AFFIDAVIT BY CONTRACTOR
CERTIFYING THAT THERE WAS NO COLLUSION
IN BIDDING FOR CONTRACT

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

_____ being first duly sworn, deposes and says:

That he is_____ of _____
(Title) (Name of Business)

bidding on FCD Contract No. 91-36 for the construction of New River Channelization, Bethany Home Road to Olive Avenue in the County of Maricopa, State of Arizona.

That, in connection with the above-mentioned project, neither he, nor anyone associated with the aforesaid business, has, directly or indirectly, participated in any collusion, entered into any contract, combination, conspiracy or other act in restraint of trade or commerce in violation of the provisions of A.R.S. Sec. 34-251, Article 4, as amended.

_____
(Signature of Affiant)

Subscribed and sworn to before me this _____day of _____, 1992.

My Commission Expires:

_____

_____
(Notary Public)

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
CONTRACTING REQUIREMENTS

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

1. All MBE/WBE firms used in attainment of the goal must be certified with the Maricopa County Minority Business Office (MBO). The MBO is located in the Maricopa County Highway Department building, 2901 West Durango Street, Phoenix, telephone 506-8656. In addition, only those firms certified at least five (5) 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.

7. MBE/WBE Trucking:

Credit for trucking by MBEs or WBEs will be the amount to be paid when the MBE or WBE trucker will perform the trucking with his/her trucks, tractors, and employees or when a MBE or WBE trucking broker has signed agreements with MBE and WBE truckers.

B. Required forms:

Two Affidavits are included as part of this section. The first form, the "MBE/WBE Assurances Affidavit", must be completed and submitted with the bid. FAILURE TO DO SO SHALL BE CAUSE FOR REJECTION OF THE BID.

A SAMPLE of the second affidavit, the "Actual MBE/WBE Participation Affidavit", is provided for information purposes. This form with actual information must be returned by the first and second low bidders by 4:00 p.m. on the seventh calendar day after bid opening. The Affidavit will list the MBE/WBE participation by MBE/WBE firm name and the related dollar value of the MBE/WBE contract. The information in this Affidavit is binding on the contractor, to the extent that any amounts may be increased and not decreased, and that if any listed MBE/WBE's are unable to enter into a subcontract with contractor, the contractor will provide a written report to the Procurement Officer through the Owner's representative.

C. Good Faith Efforts:

Bids which fail to meet MBE or WBE minimum goals at levels which equal or exceed established goals may be considered nonresponsive unless good faith efforts can be determined. Only MBE and WBE firms certified by Maricopa County five (5) calendar days prior to the bid submittal date, and which will perform a commercially useful function will be counted toward meeting the participation goals. Any portion of the work that a proposed MBE or WBE firm will subcontract to other than another certified firm, regardless of tier, will not be counted toward the applicable goals.

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

Reasonable "good faith" efforts expected could include but are not limited to:

1. Written notification to MBEs and WBEs that their participation in the contract is solicited.

2. Selection of portions of the proposed work which can be performed by MBE and WBE firms with a provision providing that they are generally competitive.

The County Minority Business Office (MBO) will assist prime contractors in identifying possible qualified and interested MBE and WBE subcontractors to meet designated MBE and WBE goals. A M/WBE directory will be made available which contractors may utilize in identifying MBE and WBE firms. It will be the responsibility of the prime contractors to obtain the MBE and WBE firms necessary to meet the MBE and WBE goals.

FAILURE TO CONTACT THE MBO FOR ASSISTANCE in complying with these goals may result in not having implemented "good faith" efforts. Contact may be in writing, by telephone, or in person. If by phone or in person, name of MBO person spoken to should be obtained and vwritten within the "good faith efforts" documentation submittal.

FAILURE TO IMPLEMENT "GOOD FAITH" efforts in accordance with the Maricopa County Minority Business Enterprise Program to the satisfaction of Maricopa County, could result in the rejection of the bid.

Documentation to support bidder's "good faith" efforts should include:

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

2. Names, addresses and telephone numbers; and dates of notification of certified MBEs and WBEs solicited by direct mail for this project; and dates and methods used for follow up of initial solicitations to determine with certainty whether MBEs or WBEs were interested in subcontracting.

3. Items of work for which bidder requested sub bids, or materials to be supplied by MBEs and WBEs; information furnished to interested MBEs and WBEs such as specifications and requirements of the work; plans; and any breakdown of items of work into economically feasible units to facilitate MBE and WBE participation.

4. Names of MBEs and WBEs who submitted bids for any of the work indicated above and were not accepted by the prime. An explanation of why MBEs or WBEs contacted were not awarded subcontracts. If price was the reason for rejection of the bid, the price bid of rejected MBEs or WBEs and price bid of the selected subcontractor shall be submitted. Since utilization of available MBEs and WBEs is the program objective, price differences will not automatically be considered as cause for rejection of MBE and WBE bids.

5. The names of MBEs and WBEs who were selected as subcontractors, the portion of work to be performed and reason for selection.

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

7. The date bidder requested assistance written, in person, or by telephone, from the MBO.

The MBO will determine if good faith efforts were met based on the information submitted.

D. Appeal Process for Bid Award:

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

E. Contract Compliance:

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

1. Fulfill the MBE and WBE participation commitments submitted with their bid;

2. Continue to make every effort to utilize MBEs and WBEs;

3. Require that their subcontractors make every effort to utilize MBEs and WBEs;

4. Maintain records necessary for monitoring their compliance with provisions contained in the M/WBE Program.

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

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

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

F. Substitution of Subcontractors:

The prime contractor shall request approval to replace an approved MBE or WBE subcontractor that is unable or unwilling to perform successfully on a contract with another MBE or WBE. This failure does not remove the contractor's responsibility for meeting the MBE and WBE participation goals on the contract. A written request for substitution must be made to the Owner's Procurement Officer, through the appropriate Owner's representative, of the Procurement Agency. The substitute MBE or WBE, obtained to perform an equal or greater dollar value of work, must be approved by the Owner's Procurement Officer, through the appropriate Owner's representative, prior to beginning of any work by the substitute MBE or WBE. The request for substitution must include, but is not limited to the following:

1. Reason for substitution.

2. Name, address, and telephone number of the approved MBE or WBE.

3. Name, address and telephone number of the MBE or WBE substitute.

4. Item, numbers, description of work and the proposed MBE and/or WBE dollar amount.

5. Good faith effort documentation if the substitute subcontractor is not an MBE or WBE.

G. Requests for Pay:

Each Request for Pay must be accompanied by a Maricopa County Minority/Women-Owned Business Enterprise Program MBE/WBE Participation Report in the form as provided in these documents. The final pay request shall include a listing of total contract MBE/WBE participation. Line numbers and a description of actual work performed shall also be included. If, at the time of contract completion, the MBE and WBE commitments are not actually attained, the report is to provide an explanation of failure to comply. These reports shall be submitted within thirty (30) days of contract completion, prior to release of any remaining contract retention.

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

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

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

_____,
(the entity submitting the bid)

(CHECK ONE)

____ Will meet the **established** goal for participation by Minority/Women-Owned Business Enterprises.

____ Will provide the necessary documentation to Minority Business Office to establish that a good faith effort was made.

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

_____
Name of Firm

_____
Signature

_____
Title

STATE OF **ARIZONA**)
)ss.
County of **Maricopa**)

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

_____
Notary Public

S A M P L E

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
MINORITY/WOMEN-OWNED BUSINESS ENTERPRISE PROGRAM
Actual Minority/Women-owned Participation

_____ FCD 91-36
Name of Prime Contractor Project Number

_____ _____
Contact Person Total Amount of Contract

_____
Street No.

_____
City State Zip

Minority/Women-owned Firm	Principal	Address	Type of Work	Subcontract Amount

The undersigned has entered into a formal agreement with the minority contractors/suppliers listed above in the execution of this contract with the Flood Control District of Maricopa County.

_____
Signature

_____
Title

_____
Date

STATE OF ARIZONA)
) ss
County of Maricopa)

Subcribed and sworn to before me this ____ day of _____ by _____

_____
Notary Public

My Commission Expires:_____

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: New River Channelization, Bethany Home Road to Olive Avenue
Contract Number: FCD 91-36
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, %: 10
Total Cumulative MBE/WBE
Participation on This Contract, %: _____

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

cc: Minority Business Office
Maricopa County Highway Building
2901 West Durango Street
Phoenix, Arizona 85009

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____ , 1992, 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 91-36; New River Channelization, Bethany Home Road to Olive Avenue, and furnish at its own cost and expense all necessary machinery, equipment, tools, apparatus, materials, and labor to complete the work in the most substantial and workmanlike manner according to the Plans and Construction Specifications on file with the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona, and such modifications of the same and other directions that may be made by the Flood Control District of Maricopa County as provided herein.

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

ARTICLE III - TIME OF COMPLETION: The CONTRACTOR further covenants and agrees at its own proper cost and expense, to do all work as aforesaid for the construction of said improvements and to completely construct the same and install the material therein, as called for by this agreement free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified within the time, or times, stated in the proposal pamphlet.

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

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. The Maricopa County Minority Business Program implemented January 1, 1992, is incorporated by reference.

ARTICLE IX - ANTI-DISCRIMINATION PROVISION: The CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, or 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

BY:_____
Printed Name

BY:_____
Signature

_____
Title

DATE:_____

_____
Tax Identification Number

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PARTY OF THE SECOND PART

BY:_____
CHAIRMAN, BOARD OF DIRECTORS

DATE:_____

RECOMMENDED BY:

_____
CHIEF ENGINEER AND GENERAL MANAGER
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

DATE:_____

ATTEST:

_____
CLERK OF THE BOARD

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 _____, 1992, for FCD Contract 91-36; New River Channelization, Bethany Home Road to Olive Avenue, 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 it or its 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 _____, 1992.

_____
PRINCIPAL SEAL

BY: _____

_____
AGENT OF RECORD, STATE OF ARIZONA

_____
AGENT ADDRESS

_____
SURETY SEAL

BY: _____

BOND NUMBER. _____

_____
POWER OF ATTORNEY SEAL

BY: _____

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 _____, 1992, for FCD Contract 91-36; New River Channelization, Bethany Home Road to Olive Avenue, 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 _____, 1992.

_____
AGENT OF RECORD, STATE OF ARIZONA

_____
AGENT ADDRESS

BOND NUMBER _____

_____
POWER OF ATTORNEY **SEAL**

BY:_____

_____
PRINCIPAL **SEAL**

BY: _____

_____
SURETY **SEAL**

BY: _____

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CERTIFICATE OF INSURANCE

CONTRACT FCD 91-36 PROJECT TITLE New River Channelization, Bethany Home to Olive

NAME AND ADDRESS OF INSURANCE AGENCY	INSURANCE COMPANIES AFFORDING COVERAGES
	Company Letter A
	Company Letter B
	Company Letter C
NAME AND ADDRESS OF INSURED	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 [x] LIABILITY FORM [x] PREMISES OPERATIONS [x] CONTRACTUAL [x] BROAD FORM PROPERTY DAMAGE [x] EXPLOSION & COLLAPSE [x] PRODUCTS/COMPLETED OPERATIONS HAZARD [x] UNDERGROUND HAZARD [x] INDEPENDENT CONTRACTORS [x] PERSONAL INJURY			BODILY INJURY per person PROPERTY DAMAGE each occurrence	5,000 Combined Single Limit
	COMPREHENSIVE AUTO [x] LIABILITY & NON-OWNED			SAME AS ABOVE	
	[x] EXCESS LIABILITY			NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	10,000
	[x] WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY			STATUTORY each accident	$100
	[ ] ENGINEERS PROFESSIONAL LIABILITY			EACH CLAIM AND ANNUAL AGGREGATE	
	[x] OTHER **The Flood Control District, Maricopa County, WTI, Inc., City of Glendale, and the City of Peoria shall be named as additional insureds.**				

Except for Professional Liability Insurance and Workers' Compensation Insurance, the Flood Control District of Maricopa County is added as an additional insured in respect to liability arising in any manner out of the performance of any contract entered into between the insured and the Flood Control District or liability arising out of any services provided or duty performed by any party as required by statute, law, purchase order, or otherwise required. It is agreed that any insurance available to the named insured shall be primary of other sources that may be available. It is further agreed that no policy shall expire, be cancelled, or materially changed to effect the coverage available to the District without thirty (30) days written notice to the District. THIS CERTIFICATE IS NOT VALID UNLESS COUNTERSIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE INSURANCE COMPANY.

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

DATE ISSUED _____

_____
AUTHORIZED REPRESENTATIVE

Drafting\Forms\Form88 SRL

It is further agreed that:

The Contractor hereby agrees to indemnify and save harmless the **Flood Control District of Maricopa County, Maricopa County, WTI, Inc., City of Glendale, City of Peoria** or any of their departments, agencies, officers or 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, WTI, Inc., City of Glendale, and the City of Peoria** 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, WTI, Inc., City of Glendale, and the City of Peoria.** The above cost of damages incurred by the **Flood Control District of Maricopa County, Maricopa County, WTI, Inc., City of Glendale, City of Peoria** or any of their departments, agencies, officers or employees, or others aforesaid shall include in the event of an action, court costs, expenses for litigation and reasonable attorney's fees.

_____

Firm

_____

Date

_____

Principal

_____

Title

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CONTRACT FCD 91-36

SUPPLEMENTARY GENERAL CONDITIONS

SPECIFICATIONS:

Except as otherwise required in these Supplementary General Conditions and the Construction Special Provisions, construction of this project shall be in accordance with all applicable Maricopa Association of Governments (MAG) Uniform Standard Specifications and Uniform Standard Details, latest revision, together with Maricopa County Highway Department Supplements to the Uniform Standard Specifications.

PRECEDENCE OF CONTRACT DOCUMENTS

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

PAYMENT

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

WORK STANDARDS

The Contractor shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor Regulations (29 CFR Part 5).

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 three hundred sixty five (365) calendar days from the effective date specified in the Notice to Proceed. In the event the Contractor elects to work overtime, second shifts, weekends, or legal holidays, to complete the work that is not required by the Project Plans and these Supplementary General Conditions or Construction Special Provisions, the Contractor will be responsible to bear the additional costs that may be incurred by the Owner including engineering, inspections, testing, surveying and construction administration all in accordance with Section 108.5. These costs will be deducted from the monies due to the Contractor for each Payment Request. The costs associated with these items shall be incidental to the unit price items in the bid schedule.

NEGOTIATION CLAUSE:

Recovery of damages related to expenses incurred by the Contractor for a delay for which the Owner is responsible, which is unreasonable under the circumstances and which was not within the contemplation of the parties to the contract, shall be negotiated between the Contractor and the Owner. This provision shall not be construed to void any provisions in the contract which requires notice of delays, provides for arbitration or other procedure for settlement, or provides for liquidated damages.

WATER, LIGHT, POWER, HEAT, TELEPHONE:

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

PROGRESS SCHEDULE:

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

MATERIALS SOURCES:

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

Subsection 101.2 - Definitions and Terms:

1. Change the definition of the phrase "Board of Supervisors" to being the Board of Directors acting under the authority of the laws of the State of Arizona and in their capacity of the Board of Directors of the Flood Control District of Maricopa County, hereinafter the "FCDMC" or the "District".

2. Change the definition of the phrase "Budget Project" to being a project financed by funds set aside in the annual budget or otherwise approved by the FCDMC Board of Directors.

3. Add to the definition of the phrase "Contract Documents", the phrase "Supplementary General Conditions".

4. Change the definition of the term "Engineer" to being the person appointed by the FCDMC Board of Directors to the office of Chief Engineer and General Manager of the FCDMC acting directly or through its authorized representative, the Chief of the FCDMC Construction and Operations Division.

5. Change the definition for the phrase "Notice of Award" to a letter from the FCDMC advising the Contractor that he is the successful bidder and the FCDMC has accepted its proposal.

6. Change the definition of the term "Owner" to the Flood Control District of Maricopa County, acting through it's legally constituted officials, officers, or employees.

7. Add the definition for Maricopa County Minority Business Office (MBO); the office responsible for administering the Maricopa County Minority and Women Owned Business Enterprise Program.

8. Add the definition for the Maricopa County Minority and Women Owned Business Enterprise Program as being the Program adopted by the Board of Supervisors effective January 1, 1992.

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

It shall be the responsibility of prospective bidders to determine, prior to submission of a bid, if any addenda have been issued by the Flood Control District. This may be accomplished by calling 602-506-1501. Any addendum issued, if not already bound into the Special Provisions, must be attached and included as part of the Special Provisions and any quantities on the Bidding Schedule requiring change shall be adjusted by pen and ink, to the new figure. The Contractor's bid must be based solely on the Plans, Specifications, Special Provisions, Contract Documents and any Addenda and not upon any other written or verbal representations.

Bids which do not include appropriate addenda attached and show appropriate changes to the Bidding Schedule, and receipt of addenda acknowledged in the Proposal shall be invalid.

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

Subsection 102.6 - Subcontractors' List: A list of subcontractors proposed to be employed on the project shall be submitted with the bid, on the form provided in the Proposal.

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

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

Subsection 102.8 - Proposal Guarantee: If Guarantee is in the form of a Surety Bond as included in these Specifications, the Bond will be from a surety company duly authorized to do business in the State of Arizona.

103.3 - Award of Contract A-3

Add the following paragraph to MAG Section 103.3 - Award of Contract:

"The total bid price for basis of award of this contract will include the bid amount for item 212-5, an optional item; however, the Owner reserves the right to delete Bid Item 212-5 at no cost to the Owner, i.e. the MAG provisions for adjustment to a bid item where quantities significantly change will not apply to Bid Item 212-5."

Subsection 103.6 - Contractor's Insurance: A statement from bidder's insurance carrier shall be included in the proposal certifying that it will furnish the specified kind and amounts of insurance to the bidder if it is awarded the contract. As required by law, the statement will be from an insurance carrier or carriers authorized to do business in the State of Arizona, or countersigned by an agent of the carrier authorized to do business in the State of Arizona.

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 Certificate. The Certificate shall also name the additional insureds as Certificate Holders. The types of insurance and the limits of liability shall be as indicated on the included form.

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

Subsection 105.1 - Authority of the Engineer: In an emergency affecting the safety of life or of the adjoining property, the Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act at his discretion to prevent such threatened loss or injury. If instructed or authorized by the Engineer, the Contractor shall act without appeal. Any compensation claimed by the Contractor on account of emergency work shall be determined by the Engineer.

Subsection 105.2 - Plans and Shop Drawings: 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: Five (5) copies. Two (2) copies will be returned to the Contractor.

Subsection 105.2.1 - Substitutes and "Or-Equal" Items: Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quantity required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be accepted by Engineer under the following circumstances:

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

103.3 - Award of Contract A-3

Add the following paragraph to MAG Section 103.3 - Award of Contract:

"The total bid price for basis of award of this contract will include the bid amount for item 212-5, an optional item; however, the Owner reserves the right to delete Bid Item 212-5 at no cost to the Owner, i.e. the MAG provisions for adjustment to a bid item where quantities significantly change will not apply to Bid Item 212-5."

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 Certificate. The Certificate shall also name the additional insureds as Certificate Holders. The types of insurance and the limits of liability shall be as indicated on the included form.

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

Subsection 105.1 - Authority of the Engineer: In an emergency affecting the safety of life or of the adjoining property, the Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act at his discretion to prevent such threatened loss or injury. If instructed or authorized by the Engineer, the Contractor shall act without appeal. Any compensation claimed by the Contractor on account of emergency work shall be determined by the Engineer.

Subsection 105.2 - Plans and Shop Drawings: 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: Five (5) copies. Two (2) copies will be returned to the Contractor.

Subsection 105.2.1 - Substitutes and "Or-Equal" Items: Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quantity required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be accepted by Engineer under the following circumstances:

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

B) Substitute Items: If in Engineer's sole discretion an item does not qualify as an "or-equal" item under subparagraph 105.2.1 (A), it will be considered a proposed substitute item. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the Engineer will include the following as supplemented in the Special Provisions and as Engineer may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor. If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall first make written application to Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice contractor's achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for work on the project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish additional data about the proposed substitute.

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

105.2.2 - Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by Engineer will be similar to that provided in subparagraph 105.2.1(B).

105.2.3 - Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to subsections 105.2.1 and 105.2.2. Engineer will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. Engineer will record time required by Engineer and Engineer's Consultants in evaluating substitutes proposed or submitted by Contractor pursuant to subparagraphs 105.2.1(B) and 105.2.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with Owner for work on the project) occasioned thereby. Whether or not Engineer accepts a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer and Engineer's Consultants for evaluating each such proposed substitute item.

Subsection 105.6 - Cooperation with Utilities: An attempt has been made to determine the location of all underground utilities and drainage pipes, culverts, and structures; however, it shall be the Contractor's responsibility to cooperate with the pertinent utility companies so that any obstructing utility installation(s) may be adjusted. Should the Contractors operations result in damage to any utility the location of which has been brought to its attention, he shall assume full responsibility for such damage.

The Contractor shall contact Arizona Blue Stake (telephone number 263-1100) a minimum of two (2) working days before beginning any underground work. In addition, Blue Stake notification(s) shall be maintained on a current basis.

The following phone numbers should put the Contractor in contact with the various utility companies and agencies in the area:

Flood Control District.....506-1501
US West Communications.....831-4647
Salt River Project.....236-2765
Blue Stake (A.P.S.,Mtn. Bell,S.R.P.)..... 263-1100
Maricopa County Transportation Department.....506-8600
Right-of-Way Permits MCDOT.....506-3611
Southwest Gas Corporation.....263-1100
AT&T Communications.....981-2800
Arizona Public Service.....932-2300
City of Glendale.....435-4152
City of Peoria.....412-7212
El Paso Natural Gas Company.....438-1675
Salt River Project (Power).....236-2732
Salt River Project (Irrigation).....236-2956
Mountain Bell.....235-3278
Gravel Mining Companies.....various
U.S. Army Corps of Engineers.....261-3022
Glendale Municipal Airport.....931-5555
Arizona Department of Transportation.....255-7521

It shall be the responsibility of the Contractor to contact the utility companies in order to determine if there is a need for any bracing or shoring of facilities on the project. If bracing or shoring is necessary, the Contractor shall do so to the satisfaction of the utility company. No measurement or direct payment will be made for such bracing or shoring.

Salt River Project (SRP) and Arizona Public Service maintain energized aerial electric power lines in the vicinity of this project. Do not consider these lines to be insulated. Construction personnel working in proximity to these lines are exposed to an extreme hazard from electrical shock. Contractors, their employees, and all other construction personnel working on this project shall be aware of the danger and instructed to take adequate protective measures as required by the NES code for 230kv transmission lines and OSHA Standard 1926.550(a)15. Fill material is not allowed on or near steel components of towers. Vehicular ingress and egress shall be maintained to the towers both during and after construction. At least forty-eight (48) hours prior to construction within SRP's 330' transmission line corridor, the Contractor shall notify Mr. Bill Phillips at (602) 236-5900.

El Paso Natural Gas Company maintains a 16" high pressure gas line crossing the New River south of the new Northern Avenue bridge location.

Section 105.8 - Constructions Stakes, Lines & Grades: The Contractor will set control stakes establishing lines and grades for road work, curbs, gutters, sidewalks, structures and centerlines for utilities and necessary appurtenances as he may deem necessary, using the control line set by the Engineer.

The work under this section shall consist of furnishing all materials, personnel, and equipment, and of performing all work of surveying, except surveying for control points and right-of-way points specifically designated herein to be provided by the Engineer, required to construct all elements of the project as shown on the Plans or specified in the Contract Documents. This shall include, but shall not be limited to stakeout, layout, and elevations for roadways, channels, bank protection, pipes, structures, forms and appurtenances as shown and required, consistent with the current practices of the District. All work shall be performed by competently qualified personnel registered by the State of Arizona for the required type of survey work.

The Engineer will survey, stake and/or monument, and provide to the Contractor by mutually acceptable date, a control line for 99th Avenue Realigned and also a control line located near the easterly channel right-of-way including vertical control. Coordinate values for control line angle, beginning and ending points of curve, points of inflection, and points on line (at 500' intervals) will be based on the Plan coordinate values and provided to the Contractor. In addition, the Engineer will provide:

1. All right-of-way and easement angle points.
2. Flagging of all areas denoted as "Natural Habitat to Remain Natural."

Measurement of all pay items, quantities, and as-built surveys will be the responsibility of the Engineer.

When utility adjustments are a part of the Contract, the Contractor shall perform all layout work and set all control points, stakes, and references necessary for carrying out all such adjustments.

105.8.1 - Survey Records

Replace the last sentence of the first paragraph with the following:

"Both sets bearing the wet signature and seal of the Contractor's survey personnel (Arizona Registered Land Surveyor or Civil Engineer)."

The type of field book used for recording data and field notes shall be approved by the Engineer prior to use. Field notes, maps of survey, etc. shall be stamped by a registered land surveyor and all set monuments shall be tagged or stamped pursuant to Arizona Revised Statute 32-101, Article 5. All field notes, sketches, etc. shall be neat, well organized and legible. Erasures shall not be permitted in the field book. If it is determined that the original figure is incorrect, a line shall be drawn through it and the correction shall be made above it.

105.8.2 - Construction Requirements: The Contractor shall protect and save from harm all survey points provided by the Engineer. The Engineer shall replace and/or restore all Engineer-provided survey points which are removed, damaged or disturbed by any cause after the initial setting on an as-requested by the Contractor at the Contractor's expense.

Prior to beginning any survey operations, the Contractor shall furnish to the Engineer for his approval, a written outline detailing the method of staking and marking of stakes, grade control for various courses of materials, referencing, structure control, etc.

The Contractor shall trim trees, brush, and other interfering objects, not inconsistent with the plans, from survey lines in advance of all survey work to permit accurate and unimpeded work by his stake-out survey crews.

The locations and lengths shown on the plans for pipes shall be considered to be approximate. The ordering lengths for pipes shall be determined after the Contractor accurately stakes the proposed pipes and associated embankment slopes in the planned locations.

1. All right-of-way and easement angle points.
2. Flagging of all areas denoted as "Natural Habitat to Remain Natural."

Measurement of all pay items, quantities, and as-built surveys will be the responsibility of the Engineer.

When utility adjustments are a part of the Contract, the Contractor shall perform all layout work and set all control points, stakes, and references necessary for carrying out all such adjustments.

105.8.1 - Survey Records: The Contractor shall keep complete field notes for all surveying performed, including layout surveys, bench mark and temporary bench mark surveys, cut staking and fill staking, slope staking, and grade staking. The Contractor shall submit two (2) sets of copies of all survey field notes and recorded survey data to the Engineer within seven (7) calendar days after the surveying is performed. Both sets bearing the wet signature and seal of the Contractor.

The type of field book used for recording data and field notes shall be approved by the Engineer prior to use. Field notes, maps of survey, etc. shall be stamped by a registered land surveyor and all set monuments shall be tagged or stamped pursuant to Arizona Revised Statute 32-101, Article 5. All field notes, sketches, etc. shall be neat, well organized and legible. Erasures shall not be permitted in the field book. If it is determined that the original figure is incorrect, a line shall be drawn through it and the correction shall be made above it.

105.8.2 - Construction Requirements: The Contractor shall protect and save from harm all survey points provided by the Engineer. The Engineer shall replace and/or restore all Engineer-provided survey points which are removed, damaged or disturbed by any cause after the initial setting on an as-requested by the Contractor at the Contractor's expense.

Prior to beginning any survey operations, the Contractor shall furnish to the Engineer for his approval, a written outline detailing the method of staking and marking of stakes, grade control for various courses of materials, referencing, structure control, etc.

The Contractor shall trim trees, brush, and other interfering objects, not inconsistent with the plans, from survey lines in advance of all survey work to permit accurate and unimpeded work by his stake-out survey crews.

The locations and lengths shown on the plans for pipes shall be considered to be approximate. The ordering lengths for pipes shall be determined after the Contractor accurately stakes the proposed pipes and associated embankment slopes in the planned locations.

The exact position of all work shall be established from control points, baseline transit points, or other points of similar nature which are shown on the plans and/or modified by the Engineer. Any error, apparent discrepancy, or absence in or of data shown or required for accurately accomplishing the stake-out survey shall be brought to the attention of the Engineer prior to proceeding with construction.

Bench mark for borrow pits shall be established by the Contractor.

Permanent survey marker locations as shown on the plans, shall be established and referenced by the Contractor.

All control points shall be referenced by ties to acceptable objects and recorded. Any alterations or revisions in the ties shall be so noted and the information furnished to the Engineer immediately. All stake-out survey work shall be referenced to the control lines shown on the plans. All computations necessary to establish the exact position of the work shall be performed by the Contractor. All computations, survey notes and other records necessary to accomplish the work shall be neatly made. The originals of such computations, survey notes, and other records shall become the property of the District and shall be delivered to the Engineer not later than the date of acceptance of the work.

Any discrepancies in grade, alignment, earthwork quantities, locations, and/or dimensions detected by the Contractor shall immediately be brought to the attention of the Engineer. No changes in the project plans will be allowed without the approval of the Engineer.

During the progress of the Construction work, the Contractor will be required to furnish all of the surveying and stake-out incidental to the proper location by line and grade for each phase of the work.

Any existing stakes, iron pins, survey monuments, or other markers defining property lines or "Existing Habitat to Remain Natural" areas which might be disturbed during construction will be reset by the Engineer at the Contractor's expense.

105.8.3 - Payment: No separate payment will be made for Construction Surveying, and the cost thereof shall be included in the price for related items of work. Permanent survey markers shall be paid per Bid Schedule Item No. 405.

Subsection 105.10 - Inspection of Work: It shall be the responsibility of the Contractor **and/or Materials** Supplier to maintain in-house quality control. The Contractor **shall** submit requests for density testing forty-eight (48) hours in advance. Should a density test prove unsatisfactory, additional re-testing will be done at the Contractor's expense.

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

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

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

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

107.10 - Contractor's Responsibility for Work: The Contractor shall guarantee the work against defective workmanship or materials for a period of one (1) year from the date of its final acceptance under the contract. Normal wear and tear and unusual abuse or neglect will be excepted from this guarantee.

Any omission on the part of the Engineer to condemn defective work or materials at the time of construction shall not be deemed an acceptance, and the Contractor will be required to correct defective work or materials at anytime before full acceptance and within one (1) year thereafter.

Should any defects develop within one (1) year from the date of final acceptance due to faults in workmanship or materials, the Contractor shall, within fourteen (14) calendar days of receipt of written notice from the Owner, begin making the necessary repairs to the satisfaction of the Engineer. Such work shall include the repair or replacement of other work or materials damaged or affected by making the above repairs or corrective work, all at no additional cost to the District.

In case of work, materials, or equipment for which written warranties are required by the Standard Specifications or Special Provisions, the Contractor shall provide or secure from the appropriate Subcontractor or supplier such warranties addressed to and in favor of the Owner and deliver same to the Engineer prior to final acceptance of the work. Delivery of such warranties shall not relieve the Contractor from any obligation assumed under any other provisions of the contract.

The warranties and guaranties provided in this subsection of the contract documents shall be in addition to and not in limitation of any other warranties, guaranties or remedies required by law.

In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The performance bond shall remain in full force and effect through the guarantee period.

Subsection 107.10.2 - Control of Drainage: All permanent construction shall be carried on in areas free from water. Water in varying quantities may be flowing in the river during the entire period of construction as a result of either rainfall or releases from agricultural irrigation ditches. Runoff from the watersheds is rapid, and, during periods of rain, intermittent freshets may be expected.

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 New River Channelization. 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. At all locations where construction work is at a lower elevation than the elevation of the stream or groundwater at the time of doing the work, suitable cofferdams or dikes, if necessary, shall be constructed, the construction area shall be dewatered prior to commencement of work, and all subgrades, whether for earth fill, stone, or concrete, shall be kept drained and free of water throughout the working period.

No direct payment will be made for dewatering groundwater or channelizing and diverting surface water. Costs for this work shall be considered incidental to and included in the bid items for Channel Excavation and the various bid items for bank protection.

Prior to 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.

Subsection 107.10.3 - Security Fencing: The Contractor shall provide Security Fencing for all areas under construction, and shall maintain them in place until permanent safety rails are installed. This is a separate item from Section 420-Chain Link Fences. No payment shall be made for Security Fencing, the cost being considered incidental to other work items.

Subsection 107.11 - Contractor's Responsibility for Utility Property and Services: The Contractor shall take full responsibility for costs incurred due to damage to utilities as a result of grading or excavation operations.

Utility locations shown on the plans are approximate and all utilities are not necessarily shown. The possibility of conflicts with utilities exists.

107.10.2 - Control of Drainage

Add the following two sentences to the end of the first paragraph:

"The contractor shall be responsible for accommodating all river flows up to 2,000 cubic feet per second (cfs) as measured in the river channel at Glendale Avenue. Flows of a greater magnitude than the above, causing damage to the work area, that require extra or replacement effort by the contractor will be paid for by the owner upon satisfactory proof of extra work required to restore the work area to the condition prior to the river flow."

Add the following section:

"Subsection 108.2 - Subletting of Contract, (F) The Contractor shall perform, with his own organization, work amounting to not less than fifty (50) percent of the total contract cost."

In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The performance bond shall remain in full force and effect through the guarantee period.

107.10.2 - Control of Drainage

Add the following two sentences to the end of the first paragraph:

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Channelization. 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. At all locations where construction work is at a lower elevation than the elevation of the stream or groundwater at the time of doing the work, suitable cofferdams or dikes, if necessary, shall be constructed, the construction area shall be dewatered prior to commencement of work, and all subgrades, whether for earth fill, stone, or concrete, shall be kept drained and free of water throughout the working period.

No direct payment will be made for dewatering groundwater or channelizing and diverting surface water. Costs for this work shall be considered incidental to and included in the bid items for Channel Excavation and the various bid items for bank protection.

Prior to 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.

Subsection 107.10.3 - Security Fencing: The Contractor shall provide Security Fencing for all areas under construction, and shall maintain them in place until permanent safety rails are installed. This is a separate item from Section 420-Chain Link Fences. No payment shall be made for Security Fencing, the cost being considered incidental to other work items.

Subsection 107.11 - Contractor's Responsibility for Utility Property and Services: The Contractor shall take full responsibility for costs incurred due to damage to utilities as a result of grading or excavation operations.

Utility locations shown on the plans are approximate and all utilities are not necessarily shown. The possibility of conflicts with utilities exists.

Add the following section:

"Subsection 108.2 - Subletting of Contract, (F) The Contractor shall perform, with his own organization, work amounting to not less than fifty (50) percent of the total contract cost."

Subsection 108.4.1 - Sequence of Work: Unless otherwise approved in writing by the Engineer, the Contractor shall schedule and perform the work to accomplish the following:

1. Channel excavation and placement of soil cement bank protection shall proceed from north to south, except where necessary for the selection and excavation of suitable material for soil cement.

2. Olive Avenue bridge pier and bed protection shall be in place prior to the excavation of the channel between stations 199+00 and 216+00. The Contractor may excavate between two of the middle piers to a depth and width sufficient only for earthmoving equipment access.

3. Areas of channel excavation shall be brought close to finished grade prior to the placement of any fill material above the existing channel flowline. In locations of extensive gravel mining activity, fill may be placed sufficient to meet the lower of the natural flowline or the new channel flowline.

4. Construction of a new bridge at Northern Avenue is not in this contract. Construction of Northern Avenue Bridge and soil cement bank protection precedes this project. Soil cement bank construction will terminate at Station 158+00 and begin again at Station 161+10. All existing utilities at Northern Avenue will remain in place and their relocation is not part of this contract. Construction of soil cement banks between Station 158+00 and Station 161+10 is by others as depicted in design plans by BRW, Inc.; some channel excavation will be required between the soil cement banks.

5. North of Olive Avenue, the design plans show the construction of a soil cement grade control structure and channel excavation only within existing soil cement banks.

6. The design plans indicate the use of salvaged riprap at bridge structures and adjacent to side drainage outlets. If additional salvaged riprap is available in excess of these minimum requirements, this material shall be placed in the location designated as "Backfill Toe" on the design plans.

7. A new roadway, designated as "99th Avenue Realigned" on the design plans, is to be constructed to replace the existing 99th Avenue. This new roadway shall be in place and operational prior to removal of the existing pavement at the 99th Avenue dip crossing. Following removal from service, traffic barricades and detours shall be installed on the existing 99th Avenue.

8. As part of its obligation to provide for environmental mitigation the District will be preserving vegetation in areas of the channel, as designated on the design plans "Existing Habitat to Remain Natural." These areas shall be flagged by the Owner's Engineer prior to commencement of construction. No vehicle access will be allowed in these areas for the duration of construction. Areas denoted as "Ponding Area" will be filled as denoted on the plans, there are no limitations to Contractor access in these areas.

9. Construction of the New River Channelization will result in removal of the existing 99th Avenue roadway through the channel bottom. The existing 99th Avenue shall not be removed until construction of the 99th Avenue Realigned has been completed and the work is accepted. The construction of this roadway is included in this construction contract.

Subsection 108.4.2 - Contractor's Construction Schedule: The Contractor shall furnish, at the preconstruction conference, a proposed progress schedule for the work including miscellaneous items of construction which make up this project. The detail included in the progress schedule shall be acceptable to the Engineer. The progress schedule shall be updated and submitted to the Engineer prior to approval of monthly payment requests.

The Contractor shall submit weekly work schedules, with detail acceptable to the Engineer, indicating the number of personnel, type of equipment, and location and nature of the work to be performed the following week.

Subsection 108.8 - Guarantee and Warrantee Provisions: In case of work, materials, or equipment for which warranties are required by the Standard Specifications or Special Provisions, the Contractor shall provide or secure from the appropriate Subcontractor or supplier such warranties addressed to and in favor of the Owner and deliver same to the Engineer prior to final acceptance of the work.

In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by defects in workmanship or materials, the Owner may cause the work to be properly done in accordance with the provisions of the Contract Documents and to pursue whatever recourse it deems necessary to recover from the Contractor any additional expense or cost it may have incurred. The Performance Bond shall remain in full force and effect throughout the guarantee period.

Subsection 108.9 - Failure to Complete on Time: The actual cost per calendar day incurred by the Owner for Consultant Administrative and Inspection Services on this project will be added to the daily charges as indicated by TABLE 108, LIQUIDATED DAMAGES, and will be deducted from monies due or to become due to the Contractor for each and every calendar day that work shall remain uncompleted 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 Owner from deducting from monies due or to become due to the Contractor for any other costs incurred by the Owner directly attributable to the delay in completing this contract.

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

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

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

Earthwork volumes in the Bid Schedule are based upon the earthwork cross-sections presented in the Design Plans and the typical bank fill details. Some flows have occurred within the New River since preparation of the topographic base map, in addition, gravel mining operations have occurred within the project limits. The Contractor is responsible for satisfying himself of the accuracy of the existing topographic mapping used for earthwork quantities which was produced as follows:

1. Topographic mapping for the Design Plans from Olive Avenue downstream to Bethany Home was produced, at a scale of 1-inch = 100 feet with a 2 feet contour interval, by Aerial Mapping Company (AMC) from a flight dated March 14, 1988, except as noted.

2. Mapping along the channel from Northern Avenue, downstream for a distance of 4,100 feet was produced at a scale of 1-inch = 100 feet with a two feet contour interval by AMC from a flight dated June 26, 1991.

3. Topography and cross-sections north of Olive Avenue, commencing at approximately Station 213+00, were derived from topographic mapping prepared for Kaminski-Hubbard Engineers by Kenney Aerial Mapping, Inc. from a flight dated August 2, 1991, at a scale of 1" = 400' and contour intervals of 2 feet.

4. Topographic mapping for Fill Disposal Site 'B' was produced for the Corps of Engineers from a flight dated May 28, 1988, at a scale of 1" = 50' and contour intervals of 1 foot.

Exact quantities of landfills within the project site are unknown prior to construction. Organic material is not usable for fills within the project and will need to be disposed of off-site, following approval of a site by the District.

At the start of construction on the project, the Engineer will obtain field cross-sections at ninety degrees to the channel centerline control line. These cross-sections will be taken at maximum intervals of 100-feet and will extend from the west right-of-way or Temporary Construction Easement (TCE) to the east right-of-way or TCE.

Existing cross-sections will be used by the Engineer as a basis for computing actual earthwork pay quantities using the "average end area" method. In areas of landfill excavation, additional cross-sections will be taken following removal of qualifying landfill material, to be used in the computation of landfill excavation and embankment fill pay quantities.

Subsection 109.1.2 - Geotechnical Report: A geotechnical investigation has been performed for this project by Western Technologies, Inc. Results of this investigation are included in a report which will be provided to the successful bidder. Copies of this report may be reviewed by bidders at the offices of the Flood Control District of Maricopa County, located at 2801 West Durango Street, Phoenix. Copies of this report will not be made for bidders.

In addition, the District has conducted a recent investigation of landfill areas within the project limits. Data from test borings and trenches have been plotted on cross-section sheets. These sheets are for information only and are not to be considered a part of the contract documents. These sheets are available for view during the bidding period at the Flood Control District and may be purchased by bidders at a cost of 50 cents per sheet.

Subsection 109.2 - Scope of Payment: In addition to the contained provisions, the work under this section shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, supplies and incidentals to the project site; the establishment of all offices, buildings and other facilities necessary for work on the project, and for all other work operations that must be performed and costs incurred prior to beginning work on the various items on the project site.

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

1. Both progress and final pay estimates will be initially processed by the FCDMC's Construction and Operations Division on Tuesdays only, Tuesdays being the only day the Contractor may submit a pay estimate. Each pay estimate must include the required Maricopa County Minority/Women-Owned Business Enterprise Program Participation Report.

CONSTRUCTION
SPECIAL PROVISIONS
FOR
NEW RIVER CHANNELIZATION
BETHANY HOME ROAD TO OLIVE AVENUE
FCD CONTRACT NO. 91-36

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SECTION 201 - CLEARING AND GRUBBING

201.1 - Description

This work shall consist of clearing, grubbing, removing, and disposing of all trees, brush, stumps, roots, rubbish, debris, and car bodies not covered under other Contract items within the construction area. Removal of miscellaneous structures and foundations is included under Section 350 - Removal of Existing Improvements of these Special Provisions. The Contractor shall conduct a thorough site investigation to verify the number, size and types of trees and other shrubs prior to submitting his bid. Work under this section includes all fill site areas indicated on the plans.

201.3 - Construction Methods

Work under this item shall be progressed on the basis that NO BURNING will be permitted on or off the Contract site. All wood and brush shall be disposed of within seven (7) calendar days after cutting or felling unless otherwise approved. Additionally, the Contractor shall clear all trash, brush, stumps, building materials, tires, sludge, aggregate piles, and miscellaneous debris from the surfaces of areas which fills are to be placed upon. Material from aggregate piles, cleared from embankment fill areas, can be mixed with soil and placed in channel fill and overbank fill zones, by methods approved by the Engineer, which ensure against entrapment of voids and which allow for compaction of the fill soils. The quantity of these cleared materials mixed into the channel fill and overbank fill zones shall not exceed the quantity which is consistent with eliminating voids and obtaining compaction of the fill. All other cleared materials shall become the property of the Contractor and shall be disposed of off of the project right-of-way.

The Contractor shall take care to confine his operations to the areas so specified. Cacti shall be removed by the Contractor. Removal of cacti by the Contractor shall be in accordance with the "Arizona Native Plant Law," A.R.S. Chapter 7.

201.5 - Payment, Clearing and Grubbing

Replace Subsection 201.5 of the Standard Specifications with the following:

Payment for clearing and grubbing will be made on a lump sum basis under Item 201-1 in the Bid Schedule for work satisfactorily completed. Monthly payments will be made in proportion to the amount of work done as determined by the Engineer. Damages to existing facilities incurred during this work shall be repaired by the Contractor at no additional cost to the District.

201.6 - Measurement, Removal and Disposal of Trees

The number of trees which will be measured and paid for, as defined in Subsection 201.6 of the Standard Specifications, is approximate only. The Contractor shall flag all trees greater than twelve (12) inches diameter prior to removal, for verification by the Engineer. Trees greater than twelve (12) inches in diameter to be removed will be paid by the unit at the unit price under

Item 201-2 in the Bid Schedule. All other trees shall be considered to be a part of clearing and grubbing and shall be paid for as such under Item 201-1 in the Bid Schedule.

SECTION 202 - MOBILIZATION

202.1 - Description

The work under this section shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, plant, supplies, and incidentals to the project site; the establishment of all offices, buildings, and other facilities necessary for work on the project; and for all other work and operations that must be performed and costs incurred prior to beginning work on the various items on the project. Included shall be the provision of an office, equipment, furniture and utility services for the Engineer and his representatives. These offices shall be as described in detail in Section 203 of these Special Provisions.

The District has identified, and set aside for the Contractor's use, two construction work areas. One is located on the east bank south of Northern Avenue and the other at Fill Site "A" on the east bank north of Glendale Avenue.

202.2 - Method of Measurement

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

202.3 - Basis of Payment

Payment for mobilization will be made by the lump sum under Item 202 of the Bid Schedule.

The amount bid shall include the furnishing and maintaining of services and facilities noted under Subsection 202.1 - Description, to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of the work and the Contract.

The amount bid shall be payable to the Contractor when he has completed ten percent (10%) of the Contract work. For the purposes of this item, 10% of the work shall be considered completed when the total of payments earned, as reflected by estimates of the work done, as set forth in Subsection 109.7 -Payment or Bond Issue and Budget Projects, not including the amount bid for this work, shall exceed 10% of the total amount of the Contractor's bid for this Contract.

Unless provided for elsewhere, the cost of required insurance, bonds, and permits and/or any initiation of the Contract work may be included in this work.

The adjustment provisions in Section 104 and the retention of funds provisions in Section 109 shall not apply to the item of Mobilization.

When other Contract items are adjusted as provided in Section 104, and if the costs applicable to such items of work include mobilization costs, such mobilization costs will be considered as recovered by the Contractor in the lump sum paid for mobilization and will be excluded from consideration in determining compensation under Section 104.

SECTION 203 - FIELD OFFICE

203.1 - Description

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

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

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

203.2 - Facilities

General Construction: The Field Office shall be an approved and weatherproof building or mobile trailer meeting the specified requirements. The structure shall have a minimum ceiling height of seven (7) feet and shall be provided with weatherproof doors equipped with adequate locking devices. Windows shall also be provided with adequate locking devices.

203.2.1 - General Requirements

(A) Lighting - Electric light, non-glare type luminaires to provide a minimum illumination level at desk height level.

(B) Heating & Cooling - Adequate electrically powered equipment to maintain an ambient air temperature of 72 degrees F plus or minus 8 degrees.

(C) Telephones - Two telephones with separate numbers linked with conference call capability for the exclusive use of the Engineer. Long distance phone calls made on these lines will be paid for by the District.

(D) Toilet - A commode and wash sink in a separately enclosed room within the building or mobile trailer, properly ventilated and complying with applicable sanitary codes. Contractor shall provide water service.

(E) Maintenance - The Contractor shall maintain all facilities and furnished equipment in good working condition.

(F) Fire Extinguisher - Two non-toxic, dry chemical, fire extinguishers meeting Underwriters Laboratories, Inc. approval for Class A, Class B, and Class C fires with a minimum rating of 2A: 20B: 10C.

(G) Contractor shall provide electric power.

203.2.2 - Specific Requirements

In addition to the general requirements, the office shall have a minimum of 500 square feet of clear floor space, excluding the toilet area, with at least two outside doors. The furnishings shall be as follows:

4 - Suitable office desks with drawers, locks and keys.
4 - Office chairs, padded swivel type.
1 - Drafting table, adjustable height, 3 feet by 6 feet.
1 - Table, 2-1/2 feet by 6 feet, conference type.
4 - Folding chairs, padded metal for conference use
1 - Draftsman's stool

203.3 - Construction Details

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

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

203.4 - Payment:

No separate payment will be made for providing a Field, the cost being considered included under Item 202 of the Bid Schedule. The cost in Item 202 shall include full compensation for the cost of all labor, material, equipment, ground rental and utility charges (including monthly service charges, but excluding charges for long distance phone calls) necessary to complete the work. No additional payment will be made for occupancy and services during periods of Contract extension of time where engineering charges are assessed.

SECTION 205 - ROADWAY EXCAVATION

In addition to the requirements of the Standard Specifications:

205.1 - Description

Replace Subsection 205.1 of the Standard Specifications with the following:

Roadway excavation is necessary along the new roadway designated as 99th Avenue Realigned on the Design Plans. Roadway excavation shall consist of excavation involved in the grading and construction of roadways and drainage ditches, except structure excavation and trench excavation.

205.8 - Payment

Replace Subsection 205.8 of the Standard Specifications with the following:

Roadway excavation for 99th Avenue Realigned will be paid for at the lump sum price under Item 205 in the Bid Schedule. Such price shall include excavating, sloping, rounding tops and ends of excavations, loading, depositing, conditioning, spreading, and compacting the material complete in place and disposal of surplus material.

SECTION 206 - STRUCTURE EXCAVATION AND BACKFILL

In addition to the requirements of the Standard Specifications.

206.1 - Description

Structure excavation and backfill is work necessary for the placement of concrete structures as defined in Section 505 - Concrete Structures of these Special Provisions. Structures include concrete box culverts, inlet/outlet headwalls and concrete slope protection.

206.2 - Foundation Material Treatment

When the foundation material below the concrete structure is unsuitable, as determined by the Engineer, the Contractor shall overexcavate the bottom of the trench as directed and replace the overexcavation with compacted backfill, compacted to 95 percent of maximum density.

Where the original ground surface is below the base of the structure, all fill required for the structure foundation shall be placed as compacted backfill. All fill about the structure above the base of the structure to lateral dimensions 1 foot outside the base of the structure and within slopes of one to one to the finished surfaces of adjacent earthwork shall be placed as compacted backfill.

Where structures extend through soil-cement banks, bedding shall be cut from the final soil-cement pass before it hardens. The structure base shall be formed directly against the hardened soil-cement. Compaction of soil-cement around structures shall be done using hand methods. Additional concrete may be placed, at the Contractor's option, where it is not possible to provide compaction of soil-cement to the requirements of Section 221 of these Special Provisions, such additional costs, if any, shall be borne by the Contractor.

206.4 - Structure Backfill

After the structure has been constructed, it shall be backfilled using suitable fill material free from concrete and debris per Section 601 of the Standard Specifications. Backfill shall be placed to a minimum depth of 30 inches above the top of the structure before power-operated hauling or rolling equipment is used over the pipe.

The maximum equipment loading allowed over any structure shall be HS-20 loading (16,000-pound wheel load) in accordance with the "Standard Specifications for Highway Bridges", AASHTO Thirteenth Edition, 1983. Construction equipment that exerts a larger load on the top of the structure shall not be allowed to travel over the structure at any time, until a method for protecting the structure from the larger load is approved by the Engineer. For structures placed in soil-cement fill sections, after the structure bedding has been prepared and the structure installed, soil-cement material shall be placed along both sides of the structure. The soil-cement fill shall be brought up evenly on both sides and for the full length of the pipe along the soil-cement facing. Vibratory compacting equipment shall be used to obtain not less than 98 percent of maximum density as determined by ASTM D 558. Soil-cement shall conform to the specifications set forth in Section 221.

206.5 - Payment

No separate payment will be made for structure excavation or backfill, the cost being considered incidental to items listed in Section 505 - Concrete Structures.

SECTION 211 - FILL CONSTRUCTION

In addition to the requirements of the Standard Specifications:

211.1 - Description

The work under this section shall consist of placing and compacting material in fill areas designated as "Embankment Fill," "Channel Fill," "Overbank Fill," "Disposal Site Fill - 90" and "Disposal Site Fill - 95."

212.1.01 - Embankment Fill

This item of work shall consist of the construction of earthen embankments shown on the plans as "Embankment Fill"; including furnishing the fill material, watering, grading, shaping and compaction. Embankment fill shall be constructed to a smooth and uniform surface and in close conformity to the lines, grades, dimensions, and cross sections shown on the Plans or established by the Engineer.

211.1.02 - Channel Fill

Channel fill will be necessary in channel areas where the existing ground is below the new channel flow line, or three (3) feet below channel flowline in areas denoted as "Ponding Area." These are principally areas that have been previously used for gravel mining operations. Channel fill shall be compacted to a density of 90 percent.

211.1.03 - Overbank Fill

Overbank fill areas shown are designated for the disposal of excess material sufficient to bring overbank areas up to either the Top of Bank (TOB) or the elevation specified below TOB as designated on the design plans. These are minimum fill elevations necessary to control drainage, to be constructed as shown in detail on the design plans. Fill limits shown on the design plans are approximate only, overbank fill should extend sufficiently far toward or beyond the right-of-way (but within Temporary Construction Easements (TCE) in order to meet existing ground, while maintaining a minimum cross-slope toward the channel bank or side drainage collection swale of 0.2 percent (0.2%). All construction must remain within the District right-of-way or within designated construction easements. The Contractor shall make reference to right-of-way and easement plans prepared by the District in addition to the design plans. Overbank fill shall be compacted to a density of 90 percent.

211.1.04 - Disposal Site Fill

The District has the use of two fill disposal sites and two spoil sites adjacent to the New River Channelization project for the disposal of excess fill material. The locations of these sites are illustrated on Sheets 25 and 26 of the Design Plans. These sites shall be used by the Contractor, as described, for the wasting of excess fill material.

211.1 - Description

The first item "Embankment Fill" is defined as 212.1.01 - Embankment Fill. The identifying number shall be changed to 211.1.01 - Embankment Fill.

211.1.02 - Channel Fill

A-1

Delete the last sentence and replace with the following:

"Channel fill will not be subject to normal compaction testing requirements, the normal action of placement and vehicle travel being considered sufficient to ensure adequate compaction."

SECTION 211 - FILL CONSTRUCTION

In addition to the requirements of the Standard Specifications:

211.1 - Description

The work under this section shall consist of placing ... fill areas designated ... Fill - 90"

211.1 - Description

The first item "Embankment Fill" is defined as 212.1.01 - Embankment Fill. The identifying number shall be changed to 211.1.01 - Embankment Fill.

This item of work shall consist of the construction of earthen embankments shown on the plans as "Embankment Fill"; including furnishing the fill material, watering, grading, shaping and compaction. Embankment fill shall be constructed to a smooth and uniform surface and in close conformity to the lines, grades, dimensions, and cross sections shown on the Plans or established by the Engineer.

211.1.02 - Channel Fill

A-1

Delete the last sentence and replace with the following:

"Channel fill will not be subject to normal compaction testing requirements, the normal action of placement and vehicle travel being considered sufficient to ensure adequate compaction."

211.1.03 - Overbank Fill

Overbank fill areas shown are designated for the disposal of excess material sufficient to bring overbank areas up to either the Top of Bank (TOB) or the elevation specified below TOB as designated on the design plans. These are minimum fill elevations necessary to control drainage, to be constructed as shown in detail on the design plans. Fill limits shown on the design plans are approximate only, overbank fill should extend sufficiently far toward or beyond the right-of-way (but within Temporary Construction Easements (TCE) in order to meet existing ground, while maintaining a minimum cross-slope toward the channel bank or side drainage collection swale of 0.2 percent (0.2%). All construction must remain within the District right-of-way or within designated construction easements. The Contractor shall make reference to right-of-way and easement plans prepared by the District in addition to the design plans. Overbank fill shall be compacted to a density of 90 percent.

211.1.04 - Disposal Site Fill

The District has the use of two fill disposal sites and two spoil sites adjacent to the New River Channelization project for the disposal of excess fill material. The locations of these sites are illustrated on Sheets 25 and 26 of the Design Plans. These sites shall be used by the Contractor, as described, for the wasting of excess fill material.

The District is the owner of a parcel of land previously leased as a gravel mining operation and more recently used for the disposal of construction debris. This parcel is located north of Glendale Avenue and east of the New River right-of-way as shown on the design plans and referenced as Fill Disposal Site 'A'. This site shall be used for disposal of construction debris as defined in Subsection 212.2.1. Construction debris shall be covered with a minimum of six (6) feet of clean fill material below the finished grades shown on the Design Plans. Rough grading of this site shall be per the engineering plans, and fills shall be compacted to 90 percent of maximum density.

The District has negotiated for the disposal of fill material at a site located on the east bank of the channelization project, south of Olive Avenue. This site, referred to as Fill Disposal Site 'B', must be used for fill disposal to the grades as shown on the design plans, and compacted to 95 percent of maximum density. All material placed at this site must be clean, compacted fill material. No landfill material, as defined in Section 212 of these Special Provisions, will be allowed.

The District has also agreed to the placement of 60,000 cubic yards of uncompacted fill on a site referenced as Fill Disposal Site 'C', located on the northwest side of Glendale Avenue and the channel right-of-way. This site must be used and material placed evenly over the entire site. In so doing, the Contractor must ensure that existing drainage patterns are not blocked. Spoil Site "D", located south of Glendale Avenue on the west bank of the project, may be used for additional material disposal. Material shall be placed in low-lying areas first, at the direction of the Engineer. The Contractor shall submit a grading plan to the Engineer for approval prior to use of this site. No compaction will be required other than wheel rolling by hauling and spreading equipment.

211.2 - Placing

No manmade landfill material, as identified in Section 212 - Landfill Excavation & Disposal, will be allowed as "Embankment Fill" or "Disposal Site Fill-95." Construction debris, as defined in Subsection 212.2.1, can be disposed of at Disposal Site "A". When crushed to eight (8) inches in diameter or less with a minimum of four (4) feet of clean fill cover, construction debris may be disposed of in "Channel Fill" areas. Surplus graded material, obtained from on-site screening processes will be permissible, provided that in overbank fill areas the top one (1) foot uses ungraded native materials. All Fill Construction shall be compacted to a density of not less than 90 percent of the maximum density and 95 percent for "Embankment Fill" and "Disposal Site Fill-95."

211.2.01 - Embankment Fill Placement

"Embankment Fill" construction shall not be started until clearing and grubbing for the embankment fill area is completed in accordance with the requirements of Section 201.

"Embankment Fill" shall be constructed to a total width at least two (2) feet wider than that indicated on the plans, of which one (1) foot of additional width shall occur on each side of the embankment. Once constructed, the face on which soil cement is to be placed shall be trimmed back to the finished lines, grades and dimensions shown on the plans

211.2 - Placing

A-1

Delete the first sentence of the first paragraph and replace with the following:

"Placement of fill and benching shall be in accordance with the Standard Specifications. No manmade landfill material, as identified in Section 212 - Landfill Excavation of Disposal, will be allowed as 'Disposal Site Fill - 95.' Construction debris, inclusive of asphalt, may be placed within the Zone B 'Embankment Fill' area as defined in Subsection 211.2.01 and as shown on the Design Plans (Sheet 3). No asphalt concrete (pavement, hot mix, or cold mix) shall be placed beyond the toe of the soil cement within the channel."

Delete the last sentence of the first paragraph and replace with the following: A-1

"'Overbank Fill' and 'Disposal Site Fill' shall be compacted to a density of not less than 90 per
of the maximum density. 'Embankment Fill' and 'Disposal Site Fill-95' shall be compacted t
density of not less than 95 percent of the maximum density."

211.2 - Placing

A-3

211.2

Addendum No. 1 provides for asphalt, asphalt concrete pavement, or any oth form of asphalt material to be included in the embankment fill, a conditi that remains for bid item purposes.

Delete

Delete

Add the following paragraph to Section 211.2 - Placing:

"An alternative method of handling asphalt material may or may not be selecte by the Owner. In the event that the Arizona Department of Environmental Quality does not allow the asphalt material to be used within the fill areas, the optional material handling bid will be selected by the Engineer. In such event, asphalt materials will require special handling and separating. For specifics, refer to Section 212 as amended by this addendum."

The District is the owner of a parcel of land previously leased as a gravel mining operation and more recently used for the disposal of construction debris. This parcel is located north of Glendale Avenue and east of the New River right-of-way as shown on the design plans and referenced as Fill Disposal Site 'A'. This site shall be used for disposal of construction debris as defined in Subsection 212.2.1. Construction debris shall be covered with a minimum of six (6) feet of clean fill material below the finished grades shown on the Design Plans. Rough grading of this site shall be per the engineering plans, and fills shall be compacted to 90 percent of maximum density.

The District has negotiated for the disposal of fill material at a site located on the east bank of the channelization project, south of Olive Avenue. This site, referred to as Fill Disposal Site 'B', must be used for fill disposal to the grades as shown on the design plans, and compacted to 95 percent of maximum density. All material placed at this site must be clean, compacted fill material. No landfill material, as defined in Section 212 of these Special Provisions, will be allowed.

The District has also agreed to the placement of 60,000 cubic yards of uncompacted fill on a site referenced as Fill Disposal Site 'C', located on the northwest side of Glendale Avenue and the channel right-of-way. This site must be used and material placed evenly over the entire site. In so doing, the Contractor must ensure that existing drainage patterns are not blocked. Spoil Site "D", located south of Glendale Avenue on the west bank of the project, may be used for additional material disposal. Material shall be placed in low-lying areas first, at the direction of the Engineer. The Contractor shall submit a grading plan to the Engineer for approval prior to use of this site. No compaction will be required other than wheel rolling by hauling and spreading equipment.

211.2 - Placing

A-3

211.2 Addendum No. 1 provides for asphalt, asphalt concrete pavement, or any other form of asphalt material to be included in the embankment fill, a condition that remains for bid item purposes.

Delete

Delete Add the following paragraph to Section 211.2 - Placing:

"An alternative method of handling asphalt material may or may not be selected by the Owner. In the event that the Arizona Department of Environmental Quality does not allow the asphalt material to be used within the fill areas, the optional material handling bid will be selected by the Engineer. In such event, asphalt materials will require special handling and separating. For specifics, refer to Section 212 as amended by this addendum."

"Embankment Fill" construction shall not be started until clearing and grubbing for the embankment fill area is completed in accordance with the requirements of Section 201.

"Embankment Fill" shall be constructed to a total width at least two (2) feet wider than that indicated on the plans, of which one (1) foot of additional width shall occur on each side of the embankment. Once constructed, the face on which soil cement is to be placed shall be trimmed back to the finished lines, grades and dimensions shown on the plans

in order to insure proper compaction and stability of the embankment. On the backslope side, only surfaces exposed following placement of "Overbank Fill" shall be trimmed. Material trimmed from the embankment slopes shall be used as fill and/or backfill at other locations on the project. Trimming of embankment faces upon which overbank fill is to be placed will not be required. No additional payment shall be made for material placed beyond the finished lines and grades of the levees or for trimming, removing, and hauling said material, rather, these costs are considered incidental to the construction of the levee.

"Embankment Fill" shall be constructed with earth material free of debris, rubble and organic matter. The embankment fill material shall conform to the following gradation requirements when tested in accordance with ASTM C-136 and C-117:

Sieve	Percent Passing, By Dry Weight
3"	100 minimum
No. 4	40 minimum
No. 200	5 minimum

211.3 - Compacting

Wheel rolling with construction hauling equipment will not be an acceptable method of compaction. Equipment specifically designed for earthwork compaction will be acceptable. If a steel wheel roller is used, the resulting smooth surface shall be sufficiently roughened after compaction to insure bond to the succeeding layer. Vibratory compaction methods or equipment shall not be used when and/or where their use contributes to sloughing or caving of soils which the soil-cement is to be placed against.

211.3.01 - Embankment Fill Compaction

211.3.01 - Embankment Fill Compaction A-1

Delete the first sentence of the first paragraph and replace with the following:

"'Embankment Fill' material shall be placed in uniform horizontal layers not exceeding twelve (12) inches in depth before compaction except as noted in Subsection 211.3.01."

caving of soils which the soil-cement is to be placed against. Each layer of earth material shall be compacted to the specified density before the next layer is placed. Effective spreading equipment shall be used on each layer to obtain uniform thickness prior to compacting. As the compaction of each layer progresses, continuous leveling and manipulation of the material will be required to assure uniform density. Water shall be added or removed, if necessary, in order to obtain the required density. It shall be the Contractor's responsibility to properly place and compact all materials in the embankment fill section, and to correct any deficiencies resulting from improper or insufficient compaction of such materials throughout the Contract period.

The top ten (10) inches of ground on which embankment fill is to be constructed shall be compacted to a density of not less than 95 percent of the maximum density. All

211.2.01 - Embankment Fill Placement A-1

Delete the last paragraph, including the gradation requirements, and replace with the following:

"'Embankment Fill' may be constructed in a zoned configuration as indicated on Sheet 3 of the Design Plans. Zone A Embankment Fill shall be placed from materials conforming to Type I listed below. Zone B Embankment Fill shall be placed from materials conforming to either Type I or Type II listed below.

	Embankment Fill Percent Passing, Dry Weight	
Sieve	Type I	Type II
8"	100	100*
3"	100	--
No. 4	20 - 80	35 - 100
No. 200	2 - 15	0 - 20
	$5 < P.I. < 15$	$0 < P.I. < 20$

* Individual particles between 8 and 24 inches in size, including concrete, may be utilized in Zone B when placed in accordance with the requirements of this section.

Zone A and Zone B materials shall be placed in uniform horizontal layers not to exceed 12 inches in thickness, before compaction, and shall be compacted in accordance with the requirements of these specifications before the next layer is placed.

When the embankment material resulting from the required excavations consists predominately of construction debris (broken concrete, asphalt pavement, etc.) of such size that the material cannot be placed in 12 inch layers without crushing, pulverizing or further breaking down the pieces, such material may be placed in Zone B of the embankment in layers not exceeding in thickness the approximate average size of the larger fragments being excavated. The larger fragments shall be separated throughout each layer so that the spalls and finer particles of Zone B material can be evenly distributed between them to form a dense and compact mass. Each layer shall be leveled and smoothed with suitable leveling equipment.

Concrete and asphalt fragments with any dimension greater than 24 inches shall be removed and disposed of in accordance with Section 211 of these Provisions, or reduced to a maximum of 24 inches before placing in Zone B of the embankment."

211.2.01 - Embankment Fill Placement A-1

Delete the last paragraph, including the gradation requirements, and replace with the following:

"'Embankment Fill' may be constructed in a zoned configuration as indicated on Sheet 3 of the Design Plans. Zone A Embankment Fill shall be placed from materials conforming to Type I listed below. Zone B Embankment Fill shall be placed from materials conforming to either Type I or Type II listed below.

	Embankment Fill Percent Passing, Dry Weight	
Sieve	Type I	Type II
8"	100	100*
3"	100	--
No. 4	20 - 80	35 - 100
No. 200	2 - 15	0 - 20
	5<P.I.<15	0<P.I.<20

* Individual particles between 8 and 24 inches in size, including concrete, may be utilized in Zone B when placed in accordance with the requirements of this section.

Zone A and Zone B materials shall be placed in uniform horizontal layers not to exceed 12 inches in thickness, before compaction, and shall be compacted in accordance with the requirements of these specifications before the next layer is placed.

When the embankment material resulting from the required excavations consists predominately of construction debris (broken concrete, asphalt pavement, etc.) of such size that the material cannot be placed in 12 inch layers without crushing, pulverizing or further breaking down the pieces, such material may be placed in Zone B of the embankment in layers not exceeding in thickness the approximate average size of the larger fragments being excavated. The larger fragments shall be separated throughout each layer so that the spalls and finer particles of Zone B material can be evenly distributed between them to form a dense and compact mass. Each layer shall be leveled and smoothed with suitable leveling equipment. (12)

Concrete and asphalt fragments with any dimension greater than 24 inches shall be removed and disposed of in accordance with Section 211 of these Provisions, or reduced to a maximum of 24 inches before placing in Zone B of the embankment."

and manipulation of the material will be required to assure uniform density. be added or removed, if necessary, in order to obtain the required density. It shall be the Contractor's responsibility to properly place and compact all materials in the embankment fill section, and to correct any deficiencies resulting from improper or insufficient compaction of such materials throughout the Contract period.

The top ten (10) inches of ground on which embankment fill is to be constructed shall be compacted to a density of not less than 95 percent of the maximum density. All

material placed in fill areas upon which embankment fill is to be constructed shall be compacted to a density of not less than 95 percent of the maximum density.

Each layer of earth material for embankment fill construction shall be compacted to a density of not less than 95 percent of the maximum density.

211.4 - Tests

Replace Subsection 211.4 of these Standard Specifications with the following:

Optimum moisture and maximum density shall be determined in accordance with ASTM D-698 or AASHTO T-99. Field density tests shall be performed in accordance with ASTM D-1556, "Sand Cone Method" or AASHTO T-238, "Nuclear Method". Moisture contents shall be measured and reported to the nearest 0.1%.

During the progression of the work, the Engineer will review the Contractor's operations with regard to the following items:

1. Lift thickness shall not exceed the maximum allowed as herein stated. Thinner lifts than the maximum allowed may be necessary to obtain required results on some materials.

2. The compactive effort shall be uniformly applied.

3. Significant rutting, under the action of the compactor, on the final passes on a layer shall not occur.

4. Proper compaction on a layer shall be obtained as required by the specifications.

Whenever a deficiency is noted in the Contractor's operations, the Engineer will prohibit placement of an overlaying lift until the Contractor takes effective corrective action. When the Engineer determines that density tests are necessary, the Contractor shall provide any assistance requested to facilitate such tests. Such assistance shall include, but will not be limited to, excavation and backfill of test pits and holes. This work shall be considered to be incidental to construction.

Damage to any compacted lift at any time during the course of construction, such as rutting under the loads imposed by earth moving equipment, shall be fully repaired by the Contractor, at his own expense, prior to placement of any overlaying material.

211.5 - Measurement

Approximate quantities of "Disposal Site Fill-95" and "Embankment Fill" are indicated on the Bid Schedule. "Channel Fill," "Overbank Fill" and "Disposal Site Fill-90" are non-pay items and their measurement is not indicated. Fill Disposal Sites 'A' and 'B' shall be filled to the lines and grades as denoted on the design plans. Placement of fill at spoil sites "C" and "D" shall be at the direction of the Engineer.

The quantities of "Embankment Fill" and "Disposal Site Fill-95" between the lines and limits shown on the plans will be measured by the cubic yard, computed in the final compacted position. Any additional quantity of material required to compensate for foundation settlement, compaction, erosion, or other cause shall not be included in the measurement of this item. The quantities of embankment fill shall exclude the total volume of bank protection. No deductions will be made for the volumes occupied by pipes or culverts.

The 1:1 slopes of the earth cuts for the river channel may slough if surcharges of equipment or embankment fill are placed on the ground surface above and adjacent to the cut slope prior to soil-cement placement against the slope. Such sloughed slopes shall be reconstructed to the 1:1 earth slope line shown on the plans before placing the soil cement against them, or the sloughed material shall be removed and replaced with additional soil cement. The costs of reconstructing the 1:1 slopes, or placement of additional soil cement (inclusive of cement and fly ash) between sloughed slope faces and the 1:1 earth slope lines, as shown on the plans, shall be considered as included in the Contract price paid for embankment fill constructed to the lines and grades shown on the plans, and no separate payment will be made therefore.

211.6 - Payment

No measurement or direct payment will be made for construction of "Channel Fill," "Overbank Fill," grading of side drainage collection swales, or placement of excess fill at fill disposal sites or spoil sites as "Disposal Site Fill-90," the cost being considered as incidental to and included in the cost of channel excavation.

Quantities of "Disposal Site Fill-95" will be paid for at the Contract unit price per cubic yard of fill for Item 211-1 of the Bid Schedule. Such price shall include placing and compaction and all related work as specified above.

The Contract unit price for Item 211-2 - Embankment Fill, shall include the costs of furnishing all equipment, labor, and materials as necessary to complete the work of the item, except where specific costs are designated or included in another pay item of work. All incidental costs, such as acquisition of borrow pits or material outside of the right-of-way, rock drilling and blasting, compaction and special test requirements, stockpiling and rehandling of materials, precautionary measures to protect private property and utilities, to form and trim and maintain graded surfaces, and any delays caused by corrective work, required during the course of construction shall all be included in the unit price paid for Embankment Fill. When there is no pay item for Construction Water in the itemized proposal, the work shall be performed in accordance with the specifications for the appropriate items but the costs thereof shall be included in those pay items that require the application of water. Payment shall be made at the Contract unit price for Item 211-2 - Embankment Fill, as indicated in the Bid Schedule, and shall cover all costs necessary for embankment fill construction.

"Fill Construction L.M." for placement of a stockpile near 99th Avenue and Olive Avenue, and "Fill Construction C.I.P." for fill material placed along 99th Avenue, as depicted on Design Plan Sheets SP1-SP8, will be paid for by the unit price per cubic yard in place for Item 211-3 and Item 211-4, respectively, of the Bid Schedule.

The quantities of "Embankment Fill" and "Disposal Site Fill-95" between the lines and limits shown on the plans will be measured by the cubic yard, computed in the final compacted position. Any additional quantity of material required to compensate for foundation settlement, compaction, erosion, or other cause shall not be included in the measurement of this item. The quantities of embankment fill shall exclude the total volume of bank protection. No deductions will be made for the volumes occupied by pipes or culverts.

211.5 - Measurement A-1

Delete the first sentence of the third paragraph and replace with the following:

"The 1:1 slopes of the earth cuts and embankment fill slopes for the river channel may slough if surcharges of equipment or embankment fill are placed on the ground surface above and adjacent to the slope prior to soil-cement placement against the slope and all such slopes may slough or fail from excess moisture, rain, insufficient moisture, seismic events, or other similar causes."

211.6 - Payment

No measurement or direct payment will be made for construction of "Channel Fill," "Overbank Fill," grading of side drainage collection swales, or placement of excess fill at fill disposal sites or spoil sites as "Disposal Site Fill-90," the cost being considered as incidental to and included in the cost of channel excavation.

Quantities of "Disposal Site Fill-95" will be paid for at the Contract unit price per cubic yard of fill for Item 211-1 of the Bid Schedule. Such price shall include placing and compaction and all related work as specified above.

The Contract unit price for Item 211-2 - Embankment Fill, shall include the costs of furnishing all equipment, labor, and materials as necessary to complete the work of the item, except where specific costs are designated or included in another pay item of work. All incidental costs, such as acquisition of borrow pits or material outside of the right-of-way, rock drilling and blasting, compaction and special test requirements, stockpiling and rehandling of materials, precautionary measures to protect private property and utilities, to form and trim and maintain graded surfaces, and any delays caused by corrective work, required during the course of construction shall all be included in the unit price paid for Embankment Fill. When there is no pay item for Construction Water in the itemized proposal, the work shall be performed in accordance with the specifications for the appropriate items but the costs thereof shall be included in those pay items that require the application of water. Payment shall be made at the Contract unit price for Item 211-2 - Embankment Fill, as indicated in the Bid Schedule, and shall cover all costs necessary for embankment fill construction.

"Fill Construction L.M." for placement of a stockpile near 99th Avenue and Olive Avenue, and "Fill Construction C.I.P." for fill material placed along 99th Avenue, as depicted on Design Plan Sheets SP1-SP8, will be paid for by the unit price per cubic yard in place for Item 211-3 and Item 211-4, respectively, of the Bid Schedule.

SECTION 212 - LANDFILL EXCAVATION & DISPOSAL

Add the following Section 212 - Landfill Excavation & Disposal to the Standard Specifications.

212.1 - Description

This work shall consist of removing and disposing of all existing man-made landfills from within the embankment fill and soil-cement bank protection areas defined herein. Landfill is defined as all manmade waste including "Construction Debris" and "Organic Material"; separate pay items shall be used for each classification. Unless otherwise directed by the Engineer, the Contractor shall remove all existing landfills that lie within the "Embankment Fill" limits. If additional Temporary Construction Easements are required beyond those designated, the District shall be notified immediately. The TCE acquisition time shall not be considered as grounds for a delay of project. The extent of excavation beneath the bottom of the soil-cement bank will be determined as necessary by the field Engineer. Within this area, the existing landfill materials shall be removed to expose the undisturbed natural ground surface before constructing embankment fill or soil-cement bank protection.

212.2 - Disposal

212.2.1 - Construction Debris

All existing landfill materials removed by the Contractor shall be taken from the site and disposed of in a designated landfill site, or as approved by the Engineer. Construction debris, other than non-inert environmentally hazardous material, shall be placed in Fill Disposal Site "A" as designated on the plans. Construction debris placed at Site A shall have a minimum of six (6) feet of cover with clean material below the finished grades shown on the Design Plans. The Contractor shall be responsible for obtaining all necessary permits and shall submit proof of such permits to the District or its Engineer prior to the disposal of any material.

212.2.2 - Organic Material

Organic material will not be permitted at "Fill Disposal Site 'A'"; the Contractor may be able to obtain permits to use the Glendale Municipal Sanitary Landfill site located at 115th Avenue and Glendale Avenue, telephone number 931-5588. This site is currently open between the hours of 5:30 a.m. to 4:30 p.m., Monday through Friday, 9:00 a.m. to 4:00 p.m. on Saturdays. It is the Contractor's responsibility to contact this site for more specific information regarding opening hours, allowable materials, and costs. The Contractor should assure himself as to the types of waste that may be disposed of at this site; it is not possible to dispose of certain materials including friable asbestos, hazardous chemicals or waste.

Hazardous wastes, if encountered, shall be handled per Section 213 - Landfill Excavation Monitoring.

SECTION 212 - LANDFILL EXCAVATION & DISPOSAL

Add the following Section 212 - Landfill Excavation & Disposal to the Standard Specifications.

212.1 - Description

212 - LANDFILL EXCAVATION & DISPOSAL

A-3

212.1 - Description

Add the following paragraph:

"Sorting of materials to be disposed, as defined within this section, will be required to ensure a minimum concentration of such materials in any given unit volume. See Section 212.3 for concentration requirements."

embankment fill or soil-cement bank protection.

212.2 - Disposal

212.2.1 - Construction Debris

A-1

212.2.1 - Construction Debris

Delete the first two sentences and replace with the following:

"All existing landfill materials removed by the Contractor shall either be taken from the site and disposed of in a designated landfill site, processed onsite and utilized as Zone B material (as defined in Section 211), or as approved by the Engineer. Construction debris, other than non-inert environmentally hazardous material, shall either be placed as Zone B material or placed in Fill Disposal Site "A" as designated on the plans."

212.2.2 - Organic Material

Organic material will not be permitted at "Fill Disposal Site 'A'"; the Contractor may be able to obtain permits to use the Glendale Municipal Sanitary Landfill site located at 115th Avenue and Glendale Avenue, telephone number 931-5588. This site is currently open between the hours of 5:30 a.m. to 4:30 p.m., Monday through Friday, 9:00 a.m. to 4:00 p.m. on Saturdays. It is the Contractor's responsibility to contact this site for more specific information regarding opening hours, allowable materials, and costs. The Contractor should assure himself as to the types of waste that may be disposed of at this site; it is not possible to dispose of certain materials including friable asbestos, hazardous chemicals or waste.

Hazardous wastes, if encountered, shall be handled per Section 213 - Landfill Excavation Monitoring.

212.2.3 - Tires

During the excavation of the landfill material and prior to its disposal, the Contractor shall search for, remove and stockpile on-site tires contained in the landfill material. After completion of the excavation, the Contractor shall load, haul and dispose of the tires at an approved tire disposal site.

212.2.4 - Hazardous Wastes

Based on available information and from the analysis of the test pits, it is not anticipated that hazardous wastes will be encountered. However, the Contractor may encounter household chemical products and hazardous waste from small-quantity generators. Contractor's suspicion of potential hazardous wastes shall be immediately communicated to the Engineer. The Contractor shall stop working in the area as directed by the Engineer. The area with suspected hazardous wastes shall be barricaded by the Contractor. Should the presence of hazardous wastes be verified, the excavation and removal activities will be suspended and the necessary action taken to resolve the problem. The removal and disposal of any hazardous wastes and materials contaminated with hazardous waste will be performed in accordance with the approved Landfill Excavation Monitoring Plan. Payment for hazardous waste disposal shall be in accordance with Section 213.3. At that time, a change to the contract to account for the disruption would be negotiated with the Contractor.

212.3 - Measurement

Field estimates have been made of the quantities of construction debris and organic waste landfill material anticipated to be encountered on the project. Exact measurements cannot be made at this time and will be determined in the field. Quantities of construction debris will be measured by the cubic yard, as measured in place using field surveyed cross-sections.

212.4 - Payment

Payment for construction debris and organic waste and tire removal and disposal will be paid for using separate unit prices as indicated in the Bid Schedule.

Construction debris shall be paid for at the Contract unit price per cubic yard for Item 212-1 and 212-2 in the Bid Schedule.

Organic material shall be paid for at the Contract unit price per ton for Item 212-3 in the Bid Schedule.

Tires shall be paid for at the Contract unit price per ton for Item 212-4 in the Bid Schedule.

The Contract unit price shall include the costs of furnishing all equipment, labor and materials as necessary to remove landfill material, transport and dispose of this material either through compaction at a designated landfill site, or hauling to a municipal waste site.

212.2.3 - Tires

During the excavation of the landfill material and prior to its disposal, the Contractor shall search for, remove and stockpile on-site tires contained in the landfill material. After completion of the excavation, the Contractor shall load, haul and dispose of the tires at an approved tire disposal site.

212.2.4 - Hazardous Wastes

Based on available information and from the analysis of the test pits, it is not anticipated that hazardous wastes will be encountered. However, the Contractor may encounter household chemical products and hazardous waste from small-quantity generators

Add the following new Section on page CSP-15:

"212.2.5 - Asphalt Material, Disposal A-3

The Engineer may or may not direct that this optional section be utilized. If so directed to use, the Contractor shall separate asphalt excavated within the existing river banks and dispose of asphalt off-site (either at an asphalt recycler, approved commercial landfill, or equally accepted location as approved by the Engineer). Any associated costs for such separation and disposal shall be included in the bid item for this work. Separation methods include screening, loader sorting, or equally effective methods."

212.3 - Measurement A-3

Add the following 3 paragraphs to 212.3 - Measurement

"Organic material, section 212.2.2, shall be separated as cleanly as possible, but given its nature, no percentage limitations are placed on the mixture of organic and non-organic materials.

Tires, section 212.2.3, shall contain no soil or other loose material. Cemented concrete or other materials firmly attached to the tires is acceptable.

Should Section 212.2.5 be utilized, then asphalt shall be separated from soil and other materials so that the disposal mass shall contain at least 50 percent, by volume, asphalt as determined by the Engineer. The intent of separation percentages is to ensure a minimum concentration of asphalt when such material must be disposed of at a high cost, i.e., in a commercial landfill. Separation of asphalt shall be considered complete when no more than five (5) percent, by volume, asphalt remains in the residue (residue being defined as the mixture of soil, Portland cement concrete, and similar materials from which the asphalt has been removed)."

212.4 - Payment

Add the following:

"Payment for the separation and disposal of asphalt material shall be paid for at the Contract unit price per ton for optional Item 212-5 in the Bid Schedule. Note that this does not include the removal and disposal of asphalt pavement composing the 99th Avenue road surface, an item included in bid items 350-1 and 350-2."

General Comments:

In order to assist in bid preparation, an example of an approved Monitoring Plan from a previous project will be available at the Flood Control District for review by perspective bidders.

SECTION 213 - LANDFILL EXCAVATION MONITORING

213.1 - 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.

213.2 - 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 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 Engineer's inspection. Minutes of the meeting shall be prepared and signed by both the Contractor and the Engineer. 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.

213.3 - Landfill Excavation Monitoring Organization

213.3.1 - System Manager

The Contractor shall identify an 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. The System Manager shall be a certified Industrial Hygienist or Safety and Health Specialist. A Certified Industrial Hygienist shall have working experience in the chemical industry and/or chemical waste industry and will have a sound working knowledge of state and federal occupational and safety regulations and formal training in occupational safety and health. A Safety and Health Specialist will have a minimum of two years working experience in the chemical industry and/or chemical waste industry. The Safety and Health Specialist will have a sound working knowledge of State and Federal occupational safety and health regulations and formal training in occupational safety and health. This System Manager shall be approved by the Engineer.

213.3.4 - Personnel

A staff shall be maintained under the direction of the system manager to perform all Landfill Excavation Monitoring activities. The actual strength of the staff during any specific work period may vary to cover work phase needs, shifts, and rates of placement. The personnel of this staff shall be fully qualified by experienced and technical training to perform their assigned responsibilities and shall be directly hired by and work for the Prime Contractor.

213.3.5 - Monitoring

Monitoring Procedure. The Contractor shall perform monitoring specified or required to verify that control measures are adequate to provide monitoring conforming to contract requirements. A list of activities which the Contractor understands he is to perform shall be furnished as a part of the Landfill Excavation Monitoring plan to the Engineer. The list shall give the specification paragraph containing the requirements and the personnel responsible for each activity. The Contractor shall perform the following activities:

(i) Verify that monitoring complies with contract requirements.

(ii) Verify that monitoring is adequate to provide immediate notification of the presence of hazardous waste.

(iii) Verify that recording forms have been prepared.

SECTION 215 - CHANNEL EXCAVATION

In addition to the requirements of the Standard Specifications.

215.1 - Description

This item of work shall include channel excavation, removal of existing bank protection, channel filling, overbank filling, drainage channel filling and excavation, drainage ditching and grading behind embankment fills, watering, grading, shaping, and compaction. Excavated material, exclusive of old tires, rubbish, and other objectional materials, shall be used in fill areas and other areas within the project limits as shown on the plans, as required by the specifications and these Special Provisions and as directed by the Engineer. Concrete is allowable within backfill areas if it is crushed into pieces less than eight (8) inches in diameter and is covered with a minimum of four (4) feet of clean fill. Tires, rubbish, debris and other construction materials encountered by excavation shall not be incorporated into fills, and shall become the property of the Contractor and shall be disposed of off of the project right-of-way.

215.2 - Excavation and Backfill

At the time of compaction, the moisture content of material to be used in fill areas shall be such that the specified compaction will be obtained and the fill will be firm and unyielding. Material containing excessive moisture shall not be compacted until the material is dry enough to obtain the required compaction. Compensation for additional work involved in drying fill material to the required moisture content shall be considered as included in the Contract price for Channel Excavation and no additional compensation will be allowed.

Certain areas within the channel are denoted as "Existing Habitat to Remain Natural." These areas will be flagged by the Engineer prior to the start of construction. No vehicular access or construction equipment is allowed in these areas. The Contractor is responsible for maintaining the flagging of these areas for the duration of construction. Cut slopes down to channel flowline grades shall not exceed a 2 horizontal to 1 vertical slope (2:1), except as noted on the plans or approved or directed, in writing, by the Engineer.

Prior to commencing any excavation work, the Contractor shall notify the appropriate utility companies and arrange to have company line spotters present. The Contractor shall take full responsibility for costs incurred due to damage to utilities as a result of excavation or embankment operations. Utility locations shown are approximate and all utilities are not necessarily shown. No direct payment will be made for this work, the cost being included in the price for Channel Excavation.

The Contractor shall provide for continued access to private property during and after grading of the right-of-way has been accomplished. Any deviation from the Plans necessary for this purpose shall first be approved, in writing, by the Engineer. The Contractor shall secure written permission from the appropriate property owner prior to undertaking any work outside the designated right-of-way necessary for this purpose. No direct payment will be made for this work, the cost being included in the price for Channel Excavation.

SECTION 215 - CHANNEL EXCAVATION

In addition to the requirements of the Standard Specifications.

215.1 - Description

This item of work shall include channel excavation, removal of existing bank protection, channel filling, overbank filling, drainage channel filling and excavation, drainage ditching and grading behind embankment fills, watering, grading, shaping, and compaction. Excavated material, exclusive of old tires, rubbish, and other objectional materials, shall be used in fill areas and other areas within the project limits as shown on the plans, as required by the specifications and these Special Provisions and as directed by the Engineer. Concrete is allowable within backfill areas if it is crushed into pieces less than eight (8) inches in diameter and is covered with a minimum of four (4) feet of clean fill. Tires, rubbish, debris and other construction materials encountered by excavation shall not be incorporated into fills, and shall become the property of the Contractor and shall be disposed of off of the project right-of-way.

215.2 - Excavation and Backfill

At the time of compaction, the moisture content of material to be used in fill areas shall be such that the specified compaction will be obtained and the fill will be firm and unyielding. Material containing excessive moisture shall not be compacted until the material is dry enough to obtain the required compaction. Compensation for additional work involved in drying fill material to the required moisture content shall be considered as included in the Contract price for Channel Excavation and no additional compensation will be allowed.

Certain areas within the channel are denoted as "Existing Habitat to Remain Natural." These areas will be flagged by the Engineer prior to the start of construction. No vehicular access or construction equipment is allowed in these areas. The Contractor is responsible for maintaining the flagging of these areas for the duration of construction. Cut slopes down to channel flowline grades shall not exceed a 2 horizontal to 1 vertical slope (2:1), except as noted on the plans or approved or directed, in writing, by the Engineer.

215.2 - Excavation and Backfill A-1

Delete first sentence of third paragraph and replace with the following:

"Prior to commencing any excavation work, the contractor shall notify the appropriate utility companies or Arizona Blue Stake as noted in Subsection 105.6."

The Contractor shall provide for continued access to private property during and after grading of the right-of-way has been accomplished. Any deviation from the Plans necessary for this purpose shall first be approved, in writing, by the Engineer. The Contractor shall secure written permission from the appropriate property owner prior to undertaking any work outside the designated right-of-way necessary for this purpose. No direct payment will be made for this work, the cost being included in the price for Channel Excavation.

213.3.6 - Documentation

The Contractor shall maintain correct records of Landfill Excavation Monitoring operation performed including the work of subcontractors. In addition, these records shall include factual evidence that the required activities have been performed, including but not limited to the following:

(i) Type and number of control activities involved.

(ii) Results of control activities.

(iii) Proposed remedial action.

(iv) Corrective actions taken.

(v) Significant problems and results encountered outside of limits.

(vii) These records shall cover both conforming and defective or deficient. Legible copies of these records shall be furnished to the Engineer daily. The Contractor shall maintain reports and supporting data throughout the duration of the contract.

213.4 - Payment

No separate payment shall be made for providing monitoring of existing landfills, the cost being assumed to be incidental to the cost of Section 212 - Landfill Excavation & Disposal. 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 - Measurements and Payments of the Standard Specifications.

215.3 - Measurement

The quantities of Channel Excavation will be measured by the cubic yard of excavation only, as computed in the original position within the payment limits indicated on the Plans. The Engineer will compute the quantities of Channel Excavation based upon the differences between field cross-sections of the existing ground, obtained at the start of the project, and the channel design grades. Cross-sections will be obtained at a maximum spacing of 100 feet and quantities will be computed using the "average end area" method. Channel excavation quantities are inclusive of quantities to the backslope of the soil cement as necessary for its placement but not inclusive of any excavation below the flowline. Over-excavation shall not be paid for unless authorized, in writing, by the Engineer.

Excavation of landfill beyond and within the normal channel excavation limits shall be measured and paid for per Section 212 - Landfill Excavation & Disposal of these Special Provisions.

215.4 - Payment

The Contract unit price for Channel Excavation includes payment for all work encompassed by this Section, and shall be full compensation for performing all work and for furnishing all equipment, labor, and materials as necessary to complete the work of the item, except where specific costs are designated or included in another pay item of work.

All incidental costs, such as acquisition of borrow pits or material outside of the right-of-way, rock and/or concrete drilling and blasting, compaction and special test requirements, stockpiling and rehandling of materials, precautionary measures to protect private property and utilities, to form and trim graded surfaces, and any delays caused by corrective work, shall all be included in the unit price of the pay item where such costs are incurred. When there is no pay item for Construction Water in the itemized proposal, the work shall be performed in accordance with the specifications for the appropriate items but, the costs thereof shall be included in those pay items that require the application of water. Payment shall be made at the Contract unit price per cubic yard of in-place volume for Item 215-1 in the Bid Schedule and shall cover all costs of channel excavation, overexcavation and backfill as indicated on the Design Plans. No additional compensation will be made for overhaul required to complete the work.

"Drainage Excavation" in association with placement of fill along 99th Avenue, as depicted on Design Plan Sheets SP1-SP8, will be paid for by the cubic yard for Item 215-2 in the Bid Schedule.

SECTION 220 - RIPRAP CONSTRUCTION

Replace Section 220 of the Standard Specifications with the following:

220.1 - Description

This work shall consist of furnishing all plant, labor, equipment, and materials and performing all work necessary, including toe excavation, backfill, and dewatering, to place a protective covering of erosion-resistant material on the slopes of embankments, riverbanks, or levees, at culvert inlets and outlets, on bottoms and side slopes of channels, at abutment wings, at structure foundations, at drop structures, at other locations shown on the plans, or as directed by the Engineer.

Work in this section shall include grouting the existing gabion bank protection, located at the northeast property corner of the Glendale Municipal Airport, and placement of new grouted riprap. The exact location is shown on the Design Plans, but is from approximately Station 57+60 to Station 58+90.

The work shall be done in accordance with these specifications and in conformity with the lines and grades shown on the plans or established by the Engineer. The items of work included in this specification are:

(a) Salvaged Riprap: Salvaged riprap consists of river run cobbles obtained through on-site screening and grading operations. A filter blanket is not required.

(b) Imported Riprap: At the Contractor's option, riprap meeting the specifications for salvaged riprap.

(c) Grouted Riprap: Loose riprap grouted in place.

(d) Grouted Gabions: Existing stone-filled gabion baskets grouted in place.

220.2 - Materials

Rock used for riprap shall be sound and durable, free from clay or shale seams, cracks or other structural defects and shall have a specific gravity of at least 2.50.

Control of gradation will be by visual inspection. The Contractor shall provide two samples of rock of at least five (5) cubic yards each, meeting the gradation specified herein. One sample shall be provided at the quarry and one sample at the construction site. The sample at the construction site may be a part of the furnished riprap covering. These samples shall be used as a frequent reference for judging the gradation of the riprap supplied. Any difference of opinion between the Engineer and the Contractor shall be resolved by dumping and checking the gradation of two random truck loads of rock. Mechanical equipment, a sorting site, and labor needed to assist in checking gradation shall be provided by the Contractor at no additional cost to the District. No source of rock is designated. It shall be the Contractor's responsibility to negotiate for the material, obtain the right-of-way and pay all applicable royalties and damages.

The source from which the rock will be obtained shall be selected well in advance of the time when the rock will be required in the work. The acceptability of the rock will be determined by the Engineer on the basis of test results furnished by the Contractor. Suitable samples of rock shall be taken in the presence of the Engineer at least 45 days in advance of the time when the use of the rock is expected to begin. The approval of some rock fragments from a particular quarry site shall not be construed as constituting the approval of all rock fragments taken from the quarry. The Contractor shall provide the Engineer with test reports from an independent testing laboratory to establish that the sampled rock has a minimum specific gravity (Bulk SSD) of 2.50 per ASTM C127. Rock shall contain no swelling type clay.

220.3 - Preparation of Ground Surfaces

Areas on which riprap is to be constructed shall be cleared, grubbed, excavated, or backfilled in accordance with the Standard Specifications and these Special Provision. The areas shall be graded and dressed to produce a ground surface in reasonable conformance with the lines and grades shown on the plans or established by the Engineer. All soft or spongy material shall be removed to the depth directed by the Engineer and replaced with approved material. Filled area shall be compacted as specified in Section 211-Fill Construction for "Embankment Fill."

Placement of riprap and/or filter fabric through water will not be permitted unless otherwise approved, in writing, by the Engineer.

220.4 - Plain Riprap

Salvaged riprap shall be stone that has been obtained from onsite screening grading operations ranging from 4-to 12-inches in size.

The stone shall be reasonably well graded with not less than 25 nor more than 50 percent passing a 6-inch sieve.

All points on individual grading curves shall be between the boundary limits as defined by smooth curves drawn through specified grading limits plotted on a mechanical analysis diagram. The individual grading curves shall not exhibit abrupt changes in slope denoting skip grading or scalping of certain sizes. Specified grading of all material shall be met both at the source and as delivered to the project.

It is anticipated that salvaged riprap may be obtained from on-site screening and grading operations. Stone may be furnished from other sources at the option of the Contractor, subject to the conditions stated herein.

220.4.2 - Placement

Rock for riprap shall be placed on the prepared slope or area in a manner which will produce a reasonably well-graded mass of rock with a minimum practicable percentage of voids. The entire mass of rock shall be placed so as to be in conformance with the lines, grades, and thicknesses shown on the plans. Riprap shall be placed to its full course thickness at one operation and in such manner as to avoid displacing the

underlying material. Placing the riprap in layers, or by dumping into chutes, or by similar methods likely to cause segregation, will not be permitted.

The larger rocks shall be well distributed and the entire mass of rock shall conform to the gradation specified in Subsection 220.4. All material going into riprap bank protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of rock.

It is the intent of these specifications to produce a fairly compact riprap protection in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual rocks by mechanical equipment may be required to the extent necessary to secure the results specified.

The Contractor shall maintain the riprap protection until accepted, and any material displaced by any cause shall be replaced to the lines and grades shown on the plan at no additional cost to the District.

220.5 - Grouted Riprap

The grout shall consist of one part cement and three parts by volume of aggregate. The Portland Cement shall be Type II as specified in Section 725 of the Standard Specifications, and the aggregate shall be two parts sand and one part gravel passing a 3/8-inch square mesh screen. The quality of the sand and gravel shall be as specified in Section 701 of the Standard Specifications.

The water content of the mix shall not exceed 8-1/2 gallons per sack of cement. In calculating total water content of the mix, the amount of moisture carried on the surfaces of aggregate particles shall be included. Slump of grout mix shall be between 9 and 10 inches for the first course, and between 7 and 8 inches for the second course. The grout shall be mixed in a concrete mixer in the manner specified for concrete, except that time of mixing shall be as long as is required to produce a satisfactory mixture, and the grout shall be used in the work within a period of 30 minutes after mixing. Retempering of grout will not be permitted.

The consistency of the grout shall be such as to permit gravity flow into the interstices of the stones with the help of spading, rodding, and brooming. Grout batches in the same course shall be uniform in mix, size, and consistency.

220.5.2 - Placement

The existing gabion mattresses shall be exposed to their full depth below the channel flowline prior to placement of grout. New riprap shall be placed to the dimensions and locations as shown on the plans.

Prior to grouting, the stone shall be thoroughly washed with water to wash down the fines and remove silt from the full depth of the gabions, and to prevent absorption of water from the grout. The stone shall be kept wet just ahead of the actual placing of the grout.

The grout shall be placed in two courses on the side slopes. Each course shall be placed full width or in successive lateral strips approximately 10 feet in width, as applicable, extending from toe of slope to top of side slopes. The grout shall be brought to the place of final deposit pneumatically by approved means and discharged directly on the stone. The flow of grout shall be directed with brooms or other approved baffles to cover the entire area and to assure that all crevices are filled. Sufficient barring shall be done to loosen tight pockets of stone and otherwise aid the penetration of grout. The first course shall fully penetrate the stone blanket. The second course shall be placed as soon as the first course has sufficiently stiffened so that it will not flow when additional grout is added. On side slopes, all brooming shall be uphill. The finished surface of the grout shall fill the interstices of the stones to the top of stone surfaces and then lightly brushed. The finished grout shall not be lower than the top of the stones.

After completion of any strip or panel, no workmen or other load shall be permitted on the grouted surface for a period of 24-hours. The grouted surface shall be protected from injurious action of the sun; shall be protected from rain, flowing water, and mechanical injury; and shall be moist cured or membrane cured at the Contractor's option.

220.5.3 - Curing and Protection

The grout shall be kept moist for a period of 7 days following placement.

Curing compounds shall be applied as soon as the free water disappears and shall be applied in a 2-coat continuous operation by approved power-spraying equipment at a rate not to exceed 200 square feet per gallon for the combined coats. The second coat shall be applied to overlap the first coat in a direction approximately at right angles to the direction of the first application.

Membrane curing compound shall be resin-base dissipating membrane-type conforming to CRD-C 300.

220.7 - Measurement

The quantities of riprap construction shall be measured by the cubic yards of riprap, in place, within the limits of dimensions shown on the plans. Quantities of salvaged riprap in excess of design requirements may be disposed of within the project limits as shown on the design plans. No measurement shall be made for quantities in excess of design requirements.

Grouted riprap shall be measured by the cubic yard in place, inclusive of excavation, placement of rocks and grouting. Approximate dimensions and quantities are shown on the Design Plans.

The existing gabion mattresses are 12-inches thick and filled with a graded stone. Dimensions of gabion mattresses to be grouted are shown on the Design Plans.

220.8 - Payment

Payment for loose riprap will be made for the number of cubic yards of riprap in place, as measured above, on the basis of unit prices stipulated in the Bid Schedule for Item 220-1 and shall include preparation of ground surfaces and trenching.

Payment for grouted riprap shall be by the cubic yard in place, inclusive of all labor and materials on the basis of the unit prices stipulated in the Bid Schedule for Item 220-2.

Payment for grouting of existing gabions to their full depth of 12-inches shall be paid for by the square yard on the basis of the unit prices stipulated in the Bid Schedule for Item 220-3. Such payment is inclusive of incidental earthwork and watering prior to placement. The Contractor shall satisfy himself as to the approximate voids content of the gabions and adjust his unit price accordingly.

Payment for riprap placement in association with 99th Avenue, as depicted on Design Plan Sheets SP1-SP8, will be paid for by the cubic yard for Item 220-4 in the Bid Schedule.

MESSAGE DISPLAY FOR GARY SHAPIRO

To: RWS
Cc: GHS
FBF
WFR

From: Warren Rosebraugh:TALOS Host: TALOS
Postmark: 12/29/92 04:05PM Delivered: 12/29/92 04:05PM
Status: Previously read

Subject: New River specs

Message:
I talked to Fred about the contractor's question on the "Plant Operating Manual". What we require is information from the manufacturer regarding the production rate capabilities of the plant.

SECTION 221 - SOIL-CEMENT BANK PROTECTION & GRADE CONTROL STRUCTURE

221.1 - Description

The work shall consist of furnishing all materials and constructing soil-cement bank protection, channel lining, and grade control structure as required by the Plans, including toe trench excavation, backfill, and dewatering for the construction of all soil-cement falling below the proposed channel bed profile.

221.2 - Materials

221.2.1 - Portland Cement

Portland Cement shall comply with the latest Specifications as approved by the Engineer, for Portland Cement (ASTM C150, Type II [low alkali]), and shall conform to the requirements of Subsection 725.2 of the Standard Specifications.

221.2.2 - Water

Water shall be clear and free from injurious amount 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.

221.2.3 - Aggregate

Soil aggregate for use in soil-cement may be produced by the Contractor by processing, screening, crushing and/or blending soils obtained from the required excavations, and/or may be furnished by the Contractor from Contractor - furnished borrow. Soil aggregate for soil-cement shall contain no deleterious material. Before mixing as soil-cement the soils shall be stockpiled and sampled, and shall be approved by the Engineer, in accordance with the requirements of Section 221.9 of these Special Provisions. 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.

The maximum allowable plasticity index for soil-cement aggregate shall be five (5). Soil aggregate for soil-cement shall conform to the following gradation requirements when tested in accordance with ASTM C-136 and C-117:

Sieve	Percent Passing, By Dry Weight
1-1/2"	98% to 100%
No. 4	60% to 80%
No. 200	5% to 15%

Soil aggregate for soil-cement shall not contain clay/silt lumps larger than one-half (1/2) in.

SECTION 221 - SOIL-CEMENT BANK PROTECTION & GRADE CONTROL STRUCTURE

221.1 - Description

The work shall consist of furnishing all materials and constructing soil-cement bank protection, channel lining, and grade control structure as required by the Plans, including toe trench excavation, backfill, and dewatering for the construction of all soil-cement falling below the proposed channel bed profile.

221.2 - Materials

221.2.1 - Portland Cement

Portland Cement shall comply with the latest Specifications as approved by the Engineer, for Portland Cement (ASTM C150, Type II [low alkali]), and shall conform to the requirements of Subsection 725.2 of the Standard Specifications.

221.2.2 - Water

Water shall be clear and free from injurious amount 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.

221.2.3 - Aggregate

Soil aggregate for use in soil-cement may be produced by the Contractor by processing, screening, crushing and/or blending soils obtained from the required excavations, and/or may be furnished by the Contractor from Contractor - furnished borrow. Soil aggregate for soil-cement shall contain no deleterious material. Before mixing as soil-cement the soils shall be stockpiled and sampled, and shall be approved by the Engineer, in accordance with the requirements of Section 221.9 of these Special Provisions. 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.

221.2.3 - Aggregate A-1

e (5). Soil
ents when

Delete the aggregate gradation listed and replace with the following:

"Sieve	Percent Passing, By Dry Weight
3"	100%
No. 4	40% to 80%
No. 200	2% to 10%"

e-half (1/2)

in.

Blending of soil aggregate by combining soils from separate soil stockpiles shall be performed by utilization of separate storage feed bins at the plant, to the satisfaction of the Engineer.

221.2.4 - Fly Ash

Fly ash shall conform to the requirements of ASTM C-618 for Class F except that the pozzolanic activity index with lime shall be reduced to a minimum of 650 psi at seven days. The Blaine fineness shall have an average value of at least 2,800 (cm^2/gram) with a minimum value of 2,600 for any one sample. The average value shall be determined on the last five consecutive samples. The loss on ignition shall not exceed 3.0 percent.

221.3 - Equipment

The soil-cement bank protection, channel lining and drop structure may be constructed with any combination of machines and/or equipment, except as noted herein, that will produce a completed soil-cement meeting the requirements for soil pulverization, cement and fly ash and water application, mixing, transporting, placing, compacting, finishing, and curing as provided in these Specifications.

221.4 - Construction Requirements

221.4.1 - Required Contractor Submittals

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

1. The approximate length of soil-cement bank protection to be placed prior to starting compaction operations.

2. The type of compaction equipment to be used.

3. The number and type of watering equipment to be used.

4. The method to be used to keep surfaces continually moist until subsequent layers of soil-cement are placed.

5. The method to be used to cure permanently exposed soil-cement surfaces.

6. The proposed source(s) of soil to be used in soil-cement.

7. The proposed size and number of soil aggregate stockpiles.

8. The proposed sources of cement and fly ash.

9. The mix design to be used in conformance with the requirements specified herein.

Such approval shall not relieve the Contractor of the responsibility for achieving the desired result of constructing sound soil-cement, free from defects, according to the specifications and plans, or as directed by the Engineer. Changes in the source(s) of cement or fly ash will not be permitted without the prior approval of the Engineer.

221.4.2 - 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 compacted to a minimum of 95 percent of the maximum density. Optimum moisture and maximum density shall be determined in accordance with ASTM D-698 or AASHTO T-99. Field density tests shall be performed in accordance with ASTM D-1556 "Sand Cone Method" or AASHTO T-238 "Nuclear Method." Moisture contents shall be measured and reported to the nearest 0.1%.

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

Excavation and backfill of toes, and any dewatering necessary to construct soil-cement bank protection below the channel bed profile elevations shown on the plans shall be considered incidental to the construction of the soil-cement and included in the cost of Item 221-1 Soil-Cement Bank Protection and Grade Control Structure.

221.4.3 - Mixing

Soil-cement shall be mixed in an approved central-type plant having a stationary twin shaft pugmill mixer of the continuous-mixing type or an approved batch-type pugmill. The mixing plant shall be designed, coordinated and operated to produce a soil-cement mixture of the proportions specified within the required tolerances. The plant shall be equipped with positive means for controlling and maintaining a constant time of mixing. Twin shaft pugmills shall also be equipped with a positive means for maintaining a constant speed of rotation of the shafts. The plant shall be equipped with screening, feeding, and weighing and metering measuring devices that will add the soil, cementitious material(s) and water into the mixer in the specified quantities. The blades of twin shaft continuous pugmill mixers shall be adjustable for angular position on the shaft and reversible to retard the flow of the mix.

When the quantity of water is controlled by metering, provisions shall be made by the Contractor whereby the quantity of water delivered through the meter can be readily converted to weight. A water storage tank may be required to prevent the adverse effects created by surge drawdown.

The soil aggregate feed rate shall be controlled by a variable speed belt or a remotely operated gate, calibrated to accurately deliver any specified quantity of material. The

feed rate shall be readily adjustable from the control panel to compensate for changes in the moisture content of the soil or to change soil aggregate proportions when blending is required and separate bins are utilized. The combined aggregate belt feeding the mixer shall be equipped with an approved belt scale. The belt scale shall operate automatic controls which will govern the proportions of cementitious material and water as ratios of the total soil aggregate, with provisions for ready changing of the proportions.

When a continuous mixing plant with a fixed soil aggregate feed rate system is used, the belt shall travel at a constant speed. The feed system shall continuously deliver aggregate to the mixer at a constant feed rate, calculated on a dry weight basis, at any locked gate setting. The feed system shall be mechanically interlocked with all other feed devices. The soil aggregate feed monitoring system shall provide and record the rate of and total quantity of soil aggregate fed into the mixture.

The plant shall be equipped with a hydraulically or mechanically operated discharge holding bin having a minimum capacity of twenty (20) tons.

Mixing shall be sufficient to secure a homogeneous, intimate, uniform mixture of the soil, cement, fly ash, and water within the specified tolerances. Soil and cementitious material shall be mixed sufficiently to prevent cementitious balls from forming when water is added.

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 45°F (7°C), unless the air temperature is at least 40°F (5°C) and rising.

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 mix and its components.

The Contractor shall provide and install a safe sampling device on the combined soil aggregate feed and shall provide safe access to a platform to the Engineer for obtaining samples of the combined soil aggregate. The sampling device shall obtain the sample by catching the full stream of soil aggregate from the combined feed. Alternately, the Contractor may provide for the Engineer to take belt samples by stopping the feed and providing the Engineer safe access to a belt-sampling platform. The frequency of the Engineer's sampling of the combined soil aggregate feed shall be at the discretion of the Engineer, but will not be less than once a day or once for each 1,000 cubic yards of soil-cement produced.

The mixing procedure shall provide a uniform, thorough, and consistent blend of cement and fly ash. The blending method and operation shall be approved by the Engineer prior to the commencement of soil-cement production. In the blending of the cementitious materials, the percent of fly ash content shall not vary by more than + 0.50 percent of the contents specified by the Engineer. At the completion of moist mixing, the soil shall be so pulverized that 100 percent of the mixture shall pass a one (1) inch sieve and at

feed rate shall be readily adjustable from the control panel to compensate for changes in the moisture content of the soil or to change soil aggregate proportions when blending is required and separate bins are utilized. The combined aggregate belt feeding the mixer shall be equipped with an approved belt scale. The belt scale shall operate automatic controls which will govern the proportions of cementitious material and water as ratios of the total soil aggregate, with provisions for ready changing of the proportions.

When a continuous mixing plant with a fixed soil aggregate feed rate system is used, the belt shall travel at a constant speed. The feed system shall continuously deliver aggregate to the mixer at a constant feed rate, calculated on a dry weight basis, at any locked gate setting. The feed system shall be mechanically interlocked with all other feed devices. The soil aggregate feed monitoring system shall provide and record the rate of and total quantity of soil aggregate fed into the mixture.

The plant shall be equipped with a hydraulically or mechanically operated discharge holding bin having a minimum capacity of twenty (20) tons.

Mixing shall be sufficient to secure a homogeneous, intimate, uniform mixture of the soil, cement, fly ash, and water within the specified tolerances. Soil and cementitious material shall be mixed sufficiently to prevent cementitious balls from forming when water is added.

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 45°F (7°C), unless the air temperature is at least 40°F (5°C) and rising.

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 mix and its components.

The Contractor shall provide and install a safe sampling device on the combined soil aggregate feed and shall provide safe access to a platform to the Engineer for obtaining samples of the combined soil aggregate. The sampling device shall obtain the sample by catching the full stream of soil aggregate from the combined feed. Alternately, the Contractor may provide for the Engineer to take belt samples by stopping the feed and providing the Engineer safe access to a belt-sampling platform. The frequency of the Engineer's sampling of the combined soil aggregate feed shall be at the discretion of the Engineer, but will not be less than once a day or once for each 1,000 cubic yards of soil-cement produced.

221.4.3 - Mixing

A-1

Delete the last sentence on Page CSP-30 and replace with the following:

"At the completion of moist mixing, any lumps consisting of silt, clay and/or cementitious material shall be so pulverized that, exclusive of gravel-sized and larger stones, 100% shall pass a one-half (½) inch sieve, and at least 80% by dry weight shall pass a No. 4 sieve."

least 80 percent by dry weight shall pass a No. 4 sieve, exclusive of gravel or stone retained on those sieves.

Weighing devices are required at both the cement and fly ash feeds. At the direction of the Engineer, an additional weighing device may also be required when the cement and fly ash are pre-blended at the site. In the production of soil-cement, the percent of cementitious material shall not vary by more than + 0.3 percent of the contents specified by the Engineer.

Silos and feeders shall be equipped and operated so as to provide uniform rates of feed and prevent caking. Provisions shall be made to allow for ready, safe sampling of the cementitious material(s).

The weighing and metering systems shall include digital readouts which continuously display, and shall provide an hourly printed record of, the following information:

1. The total discharged quantity per hour of each weighed or metered material.

2. The cumulative total discharged quantity of each weighed or metered material.

3. The moisture content of the combined soil aggregate currently entering the mixer.

4. The cumulative total discharged weight of soil aggregate moisture.

Copies of the hourly printed records of discharged quantities and soil aggregate moisture information shall be given to the Engineer by the Contractor at the end of each day of soil-cement mixing.

Measuring devices shall be calibrated, at the Contractor's expense, and the calibration shall be approved by the Engineer.

Each measuring device shall be calibrated throughout its range to within an accuracy between plus/minus two (2.0) percent and shall be inspected and calibrated as often as the Engineer deems necessary to assure their accuracy.

The Contractor shall notify the Engineer at least 48 hours in advance of the initial plant calibration. Prior to, or at the time of, this notification the Contractor shall provide a Plant Operating Manual to the Engineer.

221.4.4 - Required Moisture

At the time of compaction, the moisture content of the soil-cement shall not be more than 2.0 percent below optimum and shall not be above optimum when the mean air temperature during construction hours does not exceed 90°F. The relationship between the soil-cement's moisture content and its optimum moisture content will be determined in accordance with ASTM D-558 or AASHTO T-134. When the mean air temperature does exceed 90°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.

221.4.5 - Handling

The soil-cement mixture 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°F or when there is a breeze or wind which promotes rapid drying of the soil-cement mixture.) Compaction shall start as soon as possible after spreading.

The Contractor shall take all necessary precautions to prevent damage to completed soil-cement by the equipment and to prevent 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 upper-most one (1) in. of the previously placed soil-cement mixture must be removed prior to continuation of the soil-cement construction.

221.4.6 - Placing

The mixture shall be placed on the moistened subgrade, embankment, or previously completed soil-cement with spreading equipment that will produce layers of 8½feet in width with a thickness as is necessary for compaction to the required dimensions of the completed soil-cement layers. The 8½feet dimension is to allow for full compaction of the design width of 8 feet with the ½ foot of excess to remain untrimmed. The compacted layers of soil-cement shall not exceed eight (8) in. in thickness, nor be less than four (4) in. in thickness. The maximum depth of compacted soil cement that shall be placed per day shall be 4 (four) feet.

Each successive layer shall be placed as soon as practicable after the compaction of the preceding layer has been verified by the Engineer.

The Contractor shall schedule placement of all soil-cement above channel bottom such that the placement of soil-cement protection at each location will be completed from channel bottom to plan top of soil-cement within five (5) calendar days, unless otherwise approved by the Engineer, or unless prevented by inclement weather.

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, except that the Contractor will not be required to keep such surfaces continuously 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 45°F (7°C), unless the air temperature is at least 40°F (5°C) and rising.

221.4.7 - Compaction

Soil-cement shall be uniformly compacted to a minimum of 95 percent of maximum density as determined by field density tests. Optimum moisture and maximum density shall be determined in accordance with ASTM D-558 or AASHTO-134. Field density tests shall be performed in accordance with ASTM D-1556 "Sand Cone Method" or AASHTO T-238 "Nuclear Method." Moisture contents shall be measured and reported to the nearest 0.1%.

Wheel rolling with hauling, grading, spreading or watering equipment shall not be an acceptable method of compaction. Vibratory compaction methods or equipment shall not be used when their use contributes to sloughing or caving of the soils which the soil-cement is to be placed against.

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 221.4.4 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 scored to a depth of at least one (1) in. with a spike-tooth instrument, or by other means approved by the Engineer, prior to placement of the next lift. The spacing of scores shall not exceed eighteen (18) inches, measured across the direction of soil-cement placement. The surface, after said scoring, 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.

221.4.8 - Finishing

After compaction, the top surface of the soil-cement shall be shaped to the required lines and grades, and cross sections and rolled to a reasonably smooth surface. The face of soil-cement shall remain untrimmed, as indicated on the plans.

Surface compaction and finishing of each layer shall be done in such a manner as to produce a dense surface free of compaction planes or loose material in no more than two (2) hours from the time compaction is started or three (3) hours from the time water is added to the mixture.

221.4.9 - Curing

Temporarily exposed surfaces shall be kept moist as set forth in Subsection 221.4.6.

Care shall be exercised to ensure that no curing material other than water is applied to surfaces that will be in contact with succeeding layers of soil-cement.

Permanently exposed surfaces shall be kept in a moist condition for seven (7) days, or they may be covered with a suitable curing material, subject to the Engineer's approval. Any damage to the protective membrane provided by an approved curing material occurring within the initial seven (7) days of placement shall be repaired immediately to the satisfaction of the Engineer.

Regardless of whether water or an approved curing material is used, the permanently exposed surfaces of the soil-cement shall be kept moist during the seven-day cure period or until the protective membrane is applied. Curing material is to be applied as soon as practicable, within a maximum time limit of twenty-four (24) hours, between the finishing of the surface and the application of the protective membrane. Whenever atmospheric temperatures are expected to drop below 30°F, soil-cement shall be protected from freezing for seven (7) days after its construction by a covering of loose earth, straw, or other suitable material approved by the Engineer.

221.4.10 - 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 in the last-placed lift by cutting back into the complete lift to form a full-depth vertical face.

221.4.11 - 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 the full depth of the layer.

221.5 - Inspection and Testing

The Engineer, with the assistance and cooperation of the Contractor, will make such inspections and tests as he deems necessary to verify the conformance of the work to the Contract Documents. These inspections and tests will 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 will 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 applicable test methods 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 at least once for every 500 cubic yards of soil-cement. Test locations shall be chosen by the Engineer. If the lift being tested does not meet the specified density requirements, it must be reworked as directed by the Engineer until it passes or be removed by the Contractor 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 and moisture content 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, if 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.

221.6 - Mix Design Methodology

The design requirements for the soil-cement bank protection shall be such that it has a minimum compressive strength of 750 psi at the end of seven (7) days. The design requirements for the Grade Control Structure shall be such that it has a minimum compressive strength of 1,000 psi at the end of seven (7) days. The Contractor shall determine the mix proportions of the aggregate, fly ash, cement and water, and shall furnish soil cement conforming to the requirements specified herein. The job-mix design with the supporting test results shall be submitted to the Engineer for approval, prior to incorporating any of the material into the work.

Included in the job-mix design data shall be the brand of cement, brand of fly ash, and source of aggregate. A new mix design shall be submitted for approval any time the Contractor requests a change in material, or proportioning of the materials, from that given in the approved mix designs.

221.7 - Mix Design for This Project

For bidding purposes only, the estimated mix design for this project shall include ten percent (10%) base cementitious material for the soil cement banks and fourteen percent (14%) base cementitious material for the Grade Control Structure.

The percent of cementitious material (cement and fly ash) to be used in the mix shall be calculated to be the weight of cementitious material (cement and fly ash) divided by the total weight of the dry soil-cement mix. The actual mix designs used on this project shall be determined by laboratory tests on each soil aggregate stockpile after construction of stockpiles has been completed.

Fly ash shall be included in the soil-cement at the discretion of the Engineer, based upon evaluation of the prices bid per ton for cement and for fly ash. Up to seventeen and one-half

(17.5) percent of the total weight of cementitious material may be fly ash. Storage for fly ash and an additional scale for fly ash shall be provided by the Contractor conforming to Section 221.4.3 -Mixing, of these Special Provisions. Full compensation for equipping the batch plant with fly ash storage silo and fly ash scales shall be considered as included in the Contract unit price paid for Soil-Cement Bank Protection and Grade Control Structure, and no additional compensation will be allowed therefore whether or not fly ash is included in the soil-cement mix design.

221.8 - Stockpiling of Aggregate

Soil aggregate stockpiles shall be constructed on level, firm ground free of brush, trees, stumps, roots, rubbish, debris, and other objectionable or deleterious material and shall be located so as to provide a distance of not less than fifty (50) feet from the outside bottom edge of conical stockpiles built up under processing plant conveyors or any other existing stockpiles. The stockpiles shall be constructed in layers, each layer not exceeding two (2) feet in thickness. Ramps formed for stockpile construction shall be of the same material as that being stockpiled, and will be considered a part of the stockpile. Before steepening a ramp, any contaminated surface material shall be removed. The stockpile height shall be limited to a maximum of twenty-four (24) feet.

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

Sampling of stockpiles will be done by the Engineer. After the stockpiles have been sampled and approved, material shall not be added to them. Each stockpile shall be completed and approved at least fourteen (14) days prior to start of soil-cement production from the stockpile.

221.9 - Sampling and Use of Stockpiles

During construction of stockpiles to be utilized in the production of soil-cement, the Contractor will be solely responsible for monitoring the uniformity of the material being placed therein to assure conformance with the gradation requirements specified for said soil material. The Contractor's attention is directed to the soils reports prepared for this project and which are on file at the office of the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona.

Stockpiles for use in soil-cement production shall be constructed to the following minimum size:

1. 40,000 cubic yards, or

2. The total quantity of material required to complete all soil-cement when the quantity of material required for blending into the soil aggregate is less than 40,000 cubic yards.

Upon completion of each stockpile, the Contractor shall notify the Engineer in order to allow for verification of the soil-cement mix design determined during design from random site

sampling. The Contractor shall provide the manpower and equipment necessary to sample each stockpile in accordance with the following procedure:

Under the direction of the Engineer, the Contractor shall use a front-end loader to excavate a face for the full height of the stockpile, extending into the stockpile a distance required by the Engineer, at a minimum of four (4) different sampling locations around the perimeter of the stockpile. The Contractor shall excavate one (1) additional sampling location for each 10,000 cubic yards in the stockpile in excess of 40,000 cubic yards. The front-end loader shall then be used to channel the total excavated face at each location from the bottom to the top in one operation, and the material obtained shall be dumped on the ground in piles.

The Engineer or his representative will then sample each of the sample piles by channeling it with a hand shovel at four (4) locations equally spaced around the perimeter.

Approval of a stockpile shall not relieve, in any degree, the full responsibility of the Contractor to furnish, in its final position, a material conforming to all the specification requirements.

221.10 - Control Strips

A soil cement control strip shall be constructed at the beginning of work on the soil cement. The control strip construction shall be used to demonstrate equipment and procedures necessary to attain the required densities for the specified course.

Each control strip, if constructed to acceptable density and surface tolerances, shall remain in place and become an integral part of the completed levee protection. Unacceptable control strips (i.e., those that fail to meet the specified requirements for density or compressive strength) shall be replaced at the Contractor's expense. A control strip shall have an area of not less than 500 square yards and the compacted thickness specified for the construction of the course which it represents.

Compaction equipment shall be capable of obtaining the specified compaction requirements without detrimentally affecting the compacted material. The equipment shall be modern, efficient compacting units meeting the requirements of this section.

Rollers shall be the self-propelled drum drive vibratory type which will be capable of transmitting dynamic impact to the surface to be compacted through a steel drum by means of revolving weights, eccentric shafts, or other equivalent methods. The compactor shall have a gross weight of not less than 23,000 pounds and shall produce a dynamic force of at least 341 pounds per lineal inch of drum width when operated at 2,400 cycles per minute (cpm). The dynamic force is defined as the force developed by revolving the eccentric weight at 2,400 cpm. The roller shall have a smooth drum or drums with a drum diameter between 4 and 5.5 feet and a width between 5.5 and 8 feet. The engine driving the eccentric mass shall have a rating of not less than 125 horsepower. Heavier compaction equipment may be required to achieve the soil cement density requirements.

The equipment used in the construction of the control strip shall be of the same type and weight to be used on the remainder of the course represented by the control strip.

The materials used in the construction of the control strip shall conform to the specification requirements. They shall be furnished from the same source and shall be of the same type used in the remainder of the course represented by the control strip. The underlying surface upon which a control strip is to be constructed shall have the prior approval of the Engineer.

221.11 - Soil Cement Strength Requirements

Soil cement shall have the following minimum required compressive strength at seven (7) days when tested in accordance with the requirements of Arizona Test Method 241:

Bank protection -	750 psi
Grade control structure -	1,000 psi

A minimum of two (2) cylinders shall be taken for testing purposes per 1,000 cubic yards of material placed but not less than two (2) cylinders per day shall be made.

221.12 - Measurement

This work shall be measured (1) in cubic yards of completed-in-place soil-cement bank protection and grade control structure between the limits shown by the specified lines, grades, and cross sections shown on the Plans; and (2) in tons of cement and tons of fly ash incorporated into the soil-cement, as determined by tests, and for the bank protection and grade control structure, between the limits shown on the plans in accordance with the instructions of the Engineer.

221.13 - Payment

This work shall be paid for at the Contract unit price per cubic yard for Soil-Cement under Item 221-1 of the Bid Schedule. 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, grade control structure, channel lining, bank transition, dewatering, trench excavation and backfill toe, watering, mixing, placing, compacting, curing, inspection and testing assistance, and all other incidental operations.

Cement and fly ash furnished will be paid for at the Contract unit price per ton under Items 221-2 and 221-3, respectively, of the Bid Schedule. Any waste of fly ash, cement and/or soil-cement by the Contractor during the handling, mixing, placing, etc., operations shall not be paid for.

SECTION 225 - WATERING

In addition to the requirements of the Standard Specifications:

225.1 - Description

Replace Section 225.1 of the Standard Specifications with the following:

The work under this section shall consist of furnishing and applying all water required for the control of dust, for the safety and convenience of the traveling public, and for the reduction of the dust nuisance to adjacent property.

The Contractor shall obtain the necessary permits required under the County Air Pollution Statutes. It shall be the responsibility of the Contractor to keep the construction site moistened to prevent pollution of air, water and adjacent property.

225.3 - Construction Equipment

The use of pressure pumps and spray bars on all sprinkling equipment used for the application of water will be required. The use of gravity flow spray bars and splash plates will not be permitted.

225.5 - Payment

There is no pay item for watering.

SECTION 310 - AGGREGATE BASE COURSE

Replace Section 310 of the Standard Specifications with the following:

310.1 - Description

Aggregate Base Course, also referred to as ABC, shall be placed in a 4-inch layer for the maintenance roads and turn around areas, where shown on the design plans.

310.2 - Materials

Materials for use as ABC shall be in accordance with Section 702 - Base Materials of the Standard Specifications, with the exception that the following gradation shall be used:

Percentage by Weight

Sieve Size	Passing Sieve
1-1/2 inch	100
1 inch	90 - 100
No. 8	35 - 55
No. 200	0 - 8.0
P.I. MAX	3

310.3 - Placement

The ABC may be placed and compacted in a single layer. After distributing, the base material shall first be watered and then immediately bladed to a uniform layer that will net, after rolling, the required thickness. If the materials deposited are not uniformly blended together, the blading operation shall be continued to such extent as may be necessary to eliminate segregation. The quantity of water applied shall be that amount which will assure proper compaction resulting in a relative density of not less than 100 percent as determined under Section 301 of the Standard Specifications. Care shall be exercised in connection with watering operations to avoid wetting the subgrade or any lower base course to detrimental extent.

Upon completion, the base surface shall be true, even and uniform, conforming to the grade and cross-section shown on the design plans.

ABC may vary not more than 1/2 inch above or below required grade and cross-section.

310.4 - Measurement

Quantities of ABC shown on the design plans are measured by the square yard, based upon the actual dimensions shown. No allowance is made for spalling or waste beyond those limits.

310.5 - Payment

Payment shall be by the square yard in place, to the dimensions shown on the design plans for Item 310 of the Bid Schedule. Such payment shall be compensation in full for materials,

transportation, miscellaneous earthwork, labor, equipment, placement, watering, and roller compaction.

SECTION 321 - ASPHALT CONCRETE PAVEMENT

In addition to the requirements of the Standard Specifications.

321.1 - Description

Asphalt concrete paving shall be used for the new 99th Avenue realigned, as shown in detail on the Design Plans.

Work shall include placement of asphalt on an Aggregate Base Course (A.B.C.) with a prepared base and as a pavement overlay, both including a thickened edge when shown on the Design Plans. Two alternative pavement sections are specified for the main roadway sections. The Contractor shall bid to his option and state such in the Bid Schedule.

321.2 - Materials and Manufacture

All asphaltic concrete shall have a surface course of Type C-¾ as shown in Table 710 of the Standard Specifications.

321.8 - Measurement

Asphalt concrete will be measured by the square yard in place to the depths as specified on the Design Plans and the Bid Schedule, inclusive of subgrade preparation and placement of base course materials where specified. Where specified on the Bid Schedule, sawcutting existing pavement and removal is included in the item of measurement.

A Type "B" thickened edge per M.A.G. Detail 201 is specified on the Design Plans and shall be included in the bid price for asphalt pavement. There will be no separate measurement for thickened edge.

321.9 - Payment

Asphalt concrete pavement as measured above, shall be paid for at the Contract price per square yard for Items 321-1 and 321-2 of the Bid Schedule. This price shall be compensation in full inclusive of a thickened edge, subgrade and base course materials and placement.

SECTION 350 - REMOVAL OF EXISTING IMPROVEMENTS

In addition to the requirements of the Standard Specifications:

350.1 - Description

This work shall consist of the removal of existing fence, buildings, asphalt road paving, concrete pads, irrigation structures, canal and ditch lining, culverts, manholes, headwalls, sand piles, gravel piles, rock piles, and other miscellaneous items from within the limits of the work.

350.2 - Construction Method

All materials, unless designated on the plans or by the Engineer as to be salvaged, reused or relocated, shall become the property of the Contractor and shall be immediately removed from the job site.

350.3 - Miscellaneous Removal and Other Work

In addition to subsection 350.3 of the Standard Specifications, the work shall include but not be limited to:

(K) 99th Avenue Pavement Removal between Stations 25+00 and 31+00 as shown on the Design Plan Sheet 17
(L) Remove existing jersey barrier
(M) Remove existing rail bank protection at ADOT outlet channel
(N) Remove existing 16 inch pipe at Olive Avenue
(O) Remove existing guard rail at Glendale Avenue
(P) Remove existing 54-inch headwalls at Glendale Avenue and Glen Harbor storm drainage outlets
(Q) Remove and salvage existing chain link fence at ADOT inlet channel. The Contractor to make arrangements for disposal of fence in excess of Contract requirements
(R) Remove existing concrete slabs and structures
(S) Remove gravel and sand stockpiles
(T) Remove Olive Avenue bridge concrete slope protection
(U) Remove concrete slope protection at Grand Drain
(V) Remove weigh station building
(W) Remove existing chain link fence at Glendale mitigation site, Site "A". Contractor to make arrangements for disposal of fence in excess of reuse requirements
(X) Miscellaneous unlisted items

350.4 - Payment

Payment for removal of all existing improvements will be made the Contract lump sum price for Item 350-1 of the Bid Schedule. This lump sum price shall be full compensation for the item complete, as described herein or on the plans.

Add the following section to the Construction Special Provisions:

"SECTION 345 - ADJUSTING FRAMES, COVERS, VALVE BOXES AND WATER METER BOXES

A-1

In addition to the requirements of the Standard Specifications:

345.1 - Description

An existing 36-inch sanitary sewer line crosses Fill Site 'B' (Plan Sheet 26) along the 99th Avenue extended alignment. Placement of fill on Fill Site 'B' will place two sanitary manholes under approximately 4 feet of fill. Work under this section shall include furnishing and installing new manhole rings sufficient to bring the manhole rims and covers to the finished grades as shown on Plan Sheet 26.

345.4 - Measurement

Measurement shall be by the unit installed for existing manholes to be raised at the locations shown on the design plans.

345.5 - Payment

Payment for raising manhole rings, frame and cover to design grades will be paid for based upon the unit price for each 36-inch sewer manhole based upon the unit price for Item 345 as set forth in the Bid Schedule. These prices shall be compensation in full for all work involved in raising the manholes to finished grade inclusive of furnishing all new materials, labor, equipment and incidentals to complete the work."

(O) Remove existing guard rail at Glendale Avenue

(P) Remove existing 54-inch headwalls at Glendale Avenue and Glen Harbor storm drainage outlets

(Q) Remove and salvage existing chain link fence at ADOT inlet channel. The Contractor to make arrangements for disposal of fence in excess of Contract requirements

(R) Remove existing concrete slabs and structures

(S) Remove gravel and sand stockpiles

(T) Remove Olive Avenue bridge concrete slope protection

(U) Remove concrete slope protection at Grand Drain

(V) Remove weigh station building

(W) Remove existing chain link fence at Glendale mitigation site, Site "A". Contractor to make arrangements for disposal of fence in excess of reuse requirements

(X) Miscellaneous unlisted items

350.4 - Payment

Payment for removal of all existing improvements will be made the Contract lump sum price for Item 350-1 of the Bid Schedule. This lump sum price shall be full compensation for the item complete, as described herein or on the plans.

Payment for removal of pavement along 99th Avenue outside of the limits listed above, as depicted on Design Plan Sheets SP1-SP8, will be paid for at the Contract price per square yard for Item 350-2.

SECTION 401 - TRAFFIC CONTROL

In addition to the requirements of the Standard Specifications:

401.1 - Description

At the time of construction, there will be bridged crossing completed at Olive Avenue, Glendale Avenue and Northern Avenue. Earthmoving equipment should be able to cross these roadways underneath the bridges without disturbing normal traffic flow. The Contractor shall take necessary precautions to protect existing structures and utilities in place.

Both temporary and permanent traffic control devices will be necessary at the 99th Avenue dip crossing prior to and following completion of 99th Avenue Realigned. Additionally, traffic control may be necessary during construction of maintenance vehicle access roads to Olive Avenue and Glendale Avenue and when construction equipment crosses existing surface streets.

401.2 - Traffic Control Devices

The number and kind of barricades, signs, delineators, barriers and all other 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.

Permanent or semi-permanent traffic control devices include warning signs, informational signs, speed limit signs, paint striping, and barricades which will be left in place following job completion. These signs are noted as to detail and type on the 99th Avenue Realigned Design Plan sheets.

401.4 - Traffic Control Measures

At the time of the pre-construction conference, the Contractor shall submit for review and approval a traffic control plan. The plan shall show all measures, including types of signs, barricades and sand berms with their placement and spacing. All advance warning signs shall be mounted on steel channels driven into the ground. Locations of all signs shall be coordinated with the Maricopa County Highway Department, Traffic Engineering Division before placement (Contact Mr. K. C. Bone, Senior Inspector, Telephone No. 506-8676).

The Contractor shall provide and maintain all necessary signs, barricades and centerline vertical panels for five working days beyond any construction which prevents traffic from using the roadway, or acceptance of the project by the District, whichever is greater.

401.6 - Measurement

In addition to providing temporary traffic control, work shall consist of providing, erecting, paint striping and maintaining before final acceptance all traffic control devices.

401.7 - Payment

The traffic control both temporary and permanent will be paid for at the lump sum price for the type and size specified on the design plans and under Item 401 in the Bid Schedule.

This shall be considered full compensation for performing all work and for furnishing all labor, equipment and materials required to erect, install, maintain and remove traffic control devices.

SECTION 405 - MONUMENTS

In addition to the requirements of the Standard Specifications.

405.1 - Description

This work shall consist of furnishing and installing Portland cement concrete right-of-way monuments and survey monuments along the east and west banks of the constructed channel at stations shown on the plans.

405.4 - Installation

Following installation of monuments, bench mark elevations, as appropriate, shall be set and marked per Subsection 105.8.1 of the Supplementary General Conditions.

405.5 - Payment

Payment for monuments shall be by the unit price for the type and size specified on the Design Plans and under Item 405 of the Bid Schedule.

SECTION 415 - FLEXIBLE METAL GUARDRAIL

In addition to the requirements of the Standard Specifications.

415.1 - Description

Work shall consist of constructing metal beam guardrailing at the Glendale Avenue bridge as shown on the design plans.

415.5 - Payment

Payment for guardrail will be made by the linear foot at the unit price under Item 415 of the Bid Schedule.

ADDENDUM NO. 3

May 12, 1992

FCD CONTRACT NO. 91-36

To Contract Documents

Title: New River Channelization
Bethany Home Road to Olive Avenue

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 No. 3 forms a part of the Contract Documents and modifies them as follows:

To Supplementary General Conditions

Add Revisions attached.

To Construction Special Provisions

Add Revisions attached.

To the Bidding Schedule

Add new attached page 6rr to the Bidding Schedule and delete page 6r.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

By _____
Stanley L. Smith, Jr., P.E.
Acting Chief Engineer and
General Manager

COE & VAN LOO CONSULTANTS, INC.

By _____
Paul W.R. Hoskin, P.E.

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 19280 PAUL W.R. HOSKIN Date Signed 5/13/92 ARIZONA, U.S.A.

NEW RIVER CHANNELIZATION
BETHANY HOME ROAD TO OLIVE AVENUE
FCD CONTRACT NO. 91-36
ADDENDUM NO. 3

The following revisions shall be made to the Supplementary General Conditions, Construction Special Provisions, Design Plans, and Bid Schedule. These changes shall be reflected in the Contractor's overall bid and shall be incorporated into the Final Contract.

SUPPLEMENTARY GENERAL CONDITIONS

103.3 - Award of Contract

Add the following paragraph to MAG Section 103.3 - Award of Contract:

"The total bid price for basis of award of this contract will include the bid amount for item 212-5, an optional item; however, the Owner reserves the right to delete Bid Item 212-5 at no cost to the Owner, i.e. the MAG provisions for adjustment to a bid item where quantities significantly change will not apply to Bid Item 212-5."

105.8.1 - Survey Records

Replace the last sentence of the first paragraph with the following:

"Both sets bearing the wet signature and seal of the Contractor's survey personnel (Arizona Registered Land Surveyor or Civil Engineer)."

CONSTRUCTION SPECIAL PROVISIONS

211.1 - Description

The first item "Embankment Fill" is defined as 212.1.01 - Embankment Fill. The identifying number shall be changed to **211.1.01 - Embankment Fill.**

211.2 - Placing

Addendum No. 1 provides for asphalt, asphalt concrete pavement, or any other form of asphalt material to be included in the embankment fill, a condition that remains for bid item purposes.

Add the following paragraph to Section 211.2 - Placing:

"An alternative method of handling asphalt material may or may not be selected by the Owner. In the event that the Arizona Department of Environmental Quality does not allow the asphalt material to be used within the fill areas, the optional material handling bid will be selected by the Engineer. In such event, asphalt materials will require special handling and separating. For specifics, refer to Section 212 as amended by this addendum."

212 - LANDFILL EXCAVATION & DISPOSAL

212.1 - Description

Add the following paragraph:

"Sorting of materials to be disposed, as defined within this section, will be required to ensure a minimum concentration of such materials in any given unit volume. See Section 212.3 for concentration requirements."

Add the following new Section on page CSP-15:

"212.2.5 - Asphalt Material, Disposal

The Engineer may or may not direct that this optional section be utilized. If so directed to use, the Contractor shall separate asphalt excavated within the existing river banks and dispose of asphalt off-site (either at an asphalt recycler, approved commercial landfill, or equally accepted location as approved by the Engineer). Any associated costs for such separation and disposal shall be included in the bid item for this work. Separation methods include screening, loader sorting, or equally effective methods."

212.3 - Measurement

Add the following 3 paragraphs to 212.3 - Measurement

"Organic material, section 212.2.2, shall be separated as cleanly as possible, but given its nature, no percentage limitations are placed on the mixture of organic and non-organic materials.

Tires, section 212.2.3, shall contain no soil or other loose material. Cemented concrete or other materials firmly attached to the tires is acceptable.

Should Section 212.2.5 be utilized, then asphalt shall be separated from soil and other materials so that the disposal mass shall contain at least 50 percent, by volume, asphalt as determined by the Engineer. The intent of separation percentages is to ensure a minimum concentration of asphalt when such material must be disposed of at a high cost, i.e., in a commercial landfill. Separation of asphalt shall be considered complete when no more than five (5) percent, by volume, asphalt remains in the residue (residue being defined as the mixture of soil, Portland cement concrete, and similar materials from which the asphalt has been removed)."

212.4 - Payment

Add the following:

"Payment for the separation and disposal of asphalt material shall be paid for at the Contract unit price per ton for optional Item 212-5 in the Bid Schedule. Note that this does not include the removal and disposal of asphalt pavement composing the 99th Avenue road surface, an item included in bid items 350-1 and 350-2."

BIDDING SCHEDULE

MUST BE LEGIBLY WRITTEN IN INK OR TYPED

PROJECT: New River Channelization, Bethany Home Road to Olive Avenue
CONTRACT: FCD 91-36

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
201-1	Clearing and Grubbing	1	LS	Four Hundred Thousand and 00/00 dollars	400,000.00	400,000.00
201-2	Tree Removal (>12" Dia.)	35	EA			
202	Mobilization	1	LS	Four Hundred Thousand and 00/00 dollars	400,000.00	400,000.00
205	Roadway Excavation	1	LS			
211-1	Disposal Site Fill-95, Fill Site B	134,837	CY			
211-2	Embankment Fill	254,172	CY			
211-3	Fill Construction L.M. (stockpile)	3,500	CY			
211-4	Fill Construction C.I.P. (Road Embkmnt)	16,275	CY			
	Landfill Excavation and Disposal of					
	Construction Debris					
212-1	First 50,000 CY	50,000	CY			
212-2	Over 50,000 CY	100,000	CY			
	Landfill Excavation and Disposal of					
212-3	Organic Material	5,000	TON			
212-4	Tires	10	TON			
212-5	Asphalt, off-site disposal	45,000	TON			
215-1	Channel Excavation	2,189,825	CY			
215-2	Drainage Excavation	1,535	CY			

SECTION 420 - CHAIN LINK FENCES

Replace Section 420 of the Standard Specifications with the following:

420.1 - Description

The work under this section shall consist of constructing from salvaged materials, a permanent chain link fence as shown on the design plans and the Arizona Department of Transportation (ADOT) details shown thereon. For construction specifications and procedures, reference shall be made to the ADOT Highways Division, "Standard Specifications for Road and Bridge Construction," Edition of 1987. For chain link fence construction only, Section 902 - "Chain Link Fence" of the above referenced specifications, shall form a part of these special provisions.

420.2 - Measurement

Salvaged chain link fence will be measured by the linear foot, along the top of the completed fence from outside to outside of end posts.

420.3 - Payment

The accepted quantities of chain link fence will be paid for at the Contract unit price per linear foot for the type and size specified on the design plans and under Item 420 in the Bid Schedule. Such payment shall be inclusive of all necessary new fittings, hardware, bracing, and post installation. No payment will be made for temporary construction or security fencing.

SECTION 505 - CONCRETE STRUCTURES

In addition to the requirements of the Standard Specifications:

505.1 - Description

The work under this Section shall include constructing inlet/outlet headwalls, concrete aprons, concrete slope protection at pipe outlet locations, concrete grade control and bridge protection, concrete box culverts, headwalls and wingwalls, and other concrete structures as shown on the plans and in conformance with the requirements of the Standard Specifications.

A concrete grade control and bridge protection will be constructed at Olive Avenue. The sideslope of this concrete facing will match existing soil cement banks on the north side of the bridge and will tie to new soil cement banks on the south side.

Two concrete box culverts form a part of the Design Plans. These structures are based upon standard details prepared by the Arizona Department of Transportation (ADOT). For construction specifications and procedures reference shall be made to the ADOT Highways Division, "Standard Specifications for Road and Bridge Construction," Edition of 1987. For concrete box culvert construction only, Section 601 - "Concrete Structures", Section 605 - "Steel Reinforcement", and Section 1011 - "Joint Materials" of the above referenced specifications.

Concrete for box culverts, concrete grade control and bridge protection at Olive Avenue shall be "Class AA" per Section 725 of the Standard Specifications, all other structures shall be "Class A".

505.2 - Subgrade for Concrete Structures

Refer to Section 206 of these Special Provisions for structure excavation and backfill.

The surfaces on which concrete slope protection is to be placed shall be finely graded to the lines and grades shown on the project plans or established by the Engineer. The surfaces shall be thoroughly compacted and shall be uniformly moistened so that water will not be drawn from the freshly placed concrete.

505.3 - Forms

Forms shall be of plywood sheathing or other suitable material and shall be true to line and grade and sufficiently rigid to resist deflection during placement of the concrete.

505.8 - Curing

The concrete surfaces, and the concrete test panels surfaces, shall be kept continuously moist for at least seven days, beginning immediately after finishing, by means of either a water spray or fog system capable of being applied continuously or by liquid membrane-forming compound or by polyethylene sheeting conforming to the requirements specified in ASTM C171 for Moisture Loss and for Thickness. If polyethylene sheeting is used, it shall be white opaque and

adjoining sheets shall overlap at least 12 inches and the laps secured to provide an airtight and windproof joint. If liquid membrane-forming compound is used, it shall be Type I conforming to the requirements of ASTM C309 and the application rate shall be 100 square feet per gallon.

505.9 - Finishing Concrete

After the concrete has been placed as nearly as practicable to the required thickness and shape outlined by forms and ground wires, the surface shall be checked with a straightedge and any low spots or depressions shall be brought up to proper grade by placing additional concrete in such a manner that the finished surface shall be smooth and uniform.

Surfaces of existing concrete against which new concrete is to be placed shall be thoroughly cleaned and moistened immediately prior to placing the new concrete. Construction joints shall be constructed as shown on the plans.

505.10 - Payment

Concrete flatwork including aprons, concrete slope protection at pipe outlet locations, and concrete grade control and bridge protection will be measured by the square foot to the thickness and dimensions shown on the plans or limits otherwise directed by the Engineer.

Payment for concrete flatwork will be made at the Contract unit price per square foot, complete in place, including welded wire fabric or reinforcing steel, steel dowels, joint construction, and all other materials, labor, tools, and equipment and performing all work necessary to complete the item in accordance with the details shown on the plans, the requirements of the Standard Specifications and Special Provisions, and directions of the Engineer.

The concrete bridge protection at Olive Avenue will be paid for at the price per square foot for eight (8) inch thick concrete under Item 505-1 in the Bid Schedule. This price shall be inclusive of reinforcing steel, steel dowels, all concrete turndowns, thickened edges, joints, joint materials, earthwork excavation and backfill.

Soil cement concrete slope protection and concrete inlet aprons at side drainage inlet structures, where shown on the Design Plans, will be paid for at the price per square foot for six (6) inch thick concrete under Item 505-2 in the Bid Schedule.

Payment for Concrete Jersey Barriers on the south side of Olive Avenue shall be at the lump sum price for Item 505-3, inclusive of removal of existing barrier rail and reconstruction as depicted on the Design Plans.

Two concrete box culverts, with headwalls and wingwalls, are to be constructed, one for the Sun City outlet channel and one for the Grand Drain outlet. These structures, inclusive of forming the box culvert barrel, headwall and wingwalls will be paid for by the lump sum price for Item 505-4 and 505-5 respectively as set forth in the Bid Schedule.

Payment for inlet and outlet headwalls and other miscellaneous concrete structures will be based upon the unit price for Item 505-6 through Item 505-24 as set forth in the Bid Schedule.

The accepted quantities of concrete structure, measured as provided above, will be paid for at the Contract unit prices specified in the bidding schedule, which prices shall be full compensation for the items, complete in place, including structure backfill and furnishing all materials, labor, tools and equipment, and performing all work necessary to complete the item in accordance with the details shown on the plans, the requirements of the Standard Specifications and Special Provisions, and the direction of the Engineer.

SECTION 510 - CONCRETE BLOCK MASONRY

In addition to the requirements of the Standard Specifications.

510.1 Description

Work shall consist of constructing concrete masonry block irrigation junction boxes and headwalls in conjunction with the construction of 99th Avenue Realigned.

510.6 - Payment

Irrigation junction boxes and SRP inlet/outlet headwalls, as shown on the Design Plans, will be paid for at the Contract unit price per price per each under Item 510-1 and Item 510-2, respectively of the Bid Schedule.

SECTION 515 - STEEL STRUCTURES

In addition to the requirements of the Standard Specifications:

515.1 - Description

The work under this section shall consist of the construction and/or installation of steel posts, debris racks and steel slide gate.

515.5 - Painting

Steel posts shall be painted with the paint colors and patterns as shown on the Design Plans. Debris racks shall be galvanized in accordance with Section 771 of the Standard Specifications. Surfaces that are abraded, cut or welded shall be covered with Grade 50B solder conforming to the requirements of ASTM B32.

515.6 - Measurement

Steel structures will be measured by the unit installed, placed at the locations shown on the plans or as directed by the Engineer.

515.7 - Payment

Payment for steel posts, inclusive of concrete footing and filling, installation and painting will be paid for based upon the unit price for Item 515-1 as set forth in the Bid Schedule.

Debris racks and steel slide gate will be paid for at the Contract unit price per each for Item 515-2 through 515-8 and Item 515-9 respectively as set forth in the Bid Schedule. These prices shall be full compensation for the work, including furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and placing the materials, complete in place, as shown on the plans, specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

SECTION 520 - STEEL AND ALUMINUM HANDRAILS

520.1 - Description

A-1

Delete the first three paragraphs and replace with the following:

"Safety Railings and Fence Gate shall be made of galvanized Schedule 40 steel pipe conforming to ASTM A 53, galvanized in accordance with Section 771 or the Standard Specifications; or High Strength (HS) steel pipe conforming to ASTM A 446, Grade D with coatings conforming to ASTM F 1234, Type B interior and Type B exterior with a minimum clear polymer coating thickness of 0.3 mils, except as noted.

Pipe Post and Pipe Rail for Safety Rails shall be of galvanized Schedule 40 steel pipe of nominal 2-1/2 inch diameter (2-7/8" od) conforming to ASTM A 53; or HS steel pipe conforming to the above requirements with a nominal weight of 4.64 lb/ft. Construction shall be continuous along the top of soil-cement embankment except in the vicinity of overhead power lines. In such cases, a non-contiguous safety rail shall be used as shown on the plans. Rails shall be provided in 32-foot lengths or manufacturer's longest lengths (minimum of 24-foot lengths).

Fence Gate Frame shall be of galvanized Schedule 40 steel pipe of nominal 1-7/8 inch diameter conforming to ASTM A 53; or HS steel pipe conforming to above requirements with a nominal weight of 2.28 lbs/ft. Gate post shall be of galvanized Schedule 80 steel pipe of nominal 3 inch size conforming to ASTM A 53."

Joining for Safety Railings shall be by one of the following:

a. Flush-type rail fittings, welded and ground smooth with railing splice locks secured with 3/8-inch hexagonal-recessed-head setscrews.

b. Mitered and welded joints made by fitting post to top rail and intermediate rail to post, mitering corners groove welding joints and grinding smooth. Railing splices shall be butted and reinforced by tight-fitting interior sleeve not less than 6 inches long.

Joints for Fence Gate shall be mitered, grooved and welds ground smooth. Tension lines shall be 7 gauge (0.177 inch dia.) coil spring steel with a minimum tensile strength of 75.00 point per square inch, and shall be zinc-coated or aluminum coated.

Surfaces of galvanized metals that are abraded or cut during construction and surfaces which are welded shall be covered with Grade 50B solder conforming to the requirements of ASTM B32.

520.3 - Erection

Installation shall be by grouting pipe post or gate post into preformed or drilled holes in the concrete or soil-cement or by placement in a concrete footing to the dimensions shown on the design plans. Concrete mixture for grouting pipe post into concrete or soil-cement shall be Class C per Section 725 of the Standard Specifications.

32' extra only block
sched 40 2½"
plan sheet 4

520.4 - Measurement

Measurement of safety rails will be by the number of linear feet measured horizontally along its entire length as designated on the plans.

520.5 - Payment

Payment for safety railings will be made at the Contract unit price bid per linear foot for Item 520-1 in the Bid Schedule. Such payment shall be compensation in full, inclusive of all end posts and intermediate posts, joints, galvanizing and field touch-up.

Payment for Fence Gate will be made at the Contract unit price bid per pair of gates and posts for Item 520-2 in the Bid Schedule. Such payment shall be compensation in full, inclusive of all fabrication, gate posts, cross bars; hinges, braces, joints, locking chain, galvanizing and field touch-up.

Payment for Fence Gate ADOT Standard Detail 12.20 will be made at the Contract unit price bid per gate and post for Item 520-3 in the Bid Schedule. Such payment shall be compensation in full, inclusive of all fabrication, gate posts, cross bars; hinges, braces, joints, locking chain, galvanizing and field touch-up.

SECTION 525 - PNEUMATICALLY PLACED MORTAR

In addition to the requirements of the Standard Specifications.

525.2 - Description

Work shall consist of sawcutting and removing existing concrete lined irrigation ditches and reconstructing to match new irrigation junction structures and headwalls. Ditch reconstruction is necessary at structures along 99th Avenue and north of the Grand Drain.

525.5 - Placing Mortar

Mortar shall be hand placed and formed to match existing ditch dimensions and thicknesses. Where applicable, the work shall include the placement of welded wire fabric.

525.9 - Payment

Payment shall be made at the Contract unit price per square foot for Item 525 in the Bid Schedule.

SECTION 601 - TRENCH EXCAVATION, BACKFILLING AND COMPACTION

In addition to the requirements of the Standard Specifications.

601.1 - Description

The work under this section shall include the excavation of trenches, backfilling and compaction as necessary to allow for the placement of storm drainage inlet pipes within embankments and soil cement banks and for the 16-inch waterline relocation south of Olive Avenue.

601.2 - Excavation

601.2.11 - Trench Excavation

The minimum trench widths permitted are shown on the Design Plans.

The Contractor will not be required to excavate the trenches to vertical sides as shown on the Design Plans, however, regardless of the actual trench widths and side slopes excavated, and regardless of whether the trench bottom is shaped to form a cradle, payment for excavation of pipe trenches will be inclusive in the linear foot price for concrete pipe.

When the foundation material below the bottom of the pipe is unsuitable, as determined by the Engineer, the Contractor shall overexcavate the bottom of the trench as directed and replace the overexcavation with compacted backfill, compacted to 95 percent of maximum density at no additional cost.

Where the original ground surface is below the base of the pipe, all fill required for the structure foundation shall be placed as compacted backfill. All fill about the pipe above the base of the pipe to lateral dimensions 1 foot outside the base of the pipe and within slopes of one horizontal to one vertical (1:1) to the finished surfaces of adjacent earthwork shall be placed as compacted backfill.

601.4 - Foundation Bedding, Backfilling and Compaction

601.4.2 - Pipe Bedding

In earthen trench conditions, pipe bedding shall be in accordance with Section 601 of the Standard Specifications and as shown on the Design Plans. Where pipes extend through soil-cement banks, a pipe cradle shall be cut from the final soil-cement pass before it hardens. The pipe shall be laid upon a 3-inch minimum thick bed of concrete (Class C, Section 725), sufficient to ensure adequate compaction under the haunches and prevent damage to the pipe. Additional concrete may be placed, at the Contractor's option, where it is not possible to provide compaction of soil-cement to the requirements of Section 221 of these Special Provisions.

601.4.3 - Backfill

After the pipe has been installed, the trench shall be backfilled using fill material placed along both sides of pipe in layers not exceeding 6 inches in compacted depth. The compacted fill shall be brought up evenly on both sides of pipe for the full length of pipe. Each layer shall be thoroughly compacted with mechanical tampers or vibrators in conformance with Section 601, Type III of the Standard Specifications.

Backfill shall be placed to a minimum depth of 30 inches above the top of the pipe before power-operated hauling or rolling equipment is used over the pipe.

The maximum equipment loading allowed over the pipe shall be HS-20 loading (16,000-pound wheel load) in accordance with the "Standard Specifications for Highway Bridges", AASHTO Thirteenth Edition, 1983. Construction equipment that exerts a larger load on the top of the pipe shall not be allowed to travel over the pipe at any time, until a method for protecting the pipe from the larger load is approved by the Engineer.

For pipe placed in soil-cement fill sections, after the pipe bedding has been prepared and the pipe installed, soil-cement material shall be placed along both sides of the pipe and made to ramp over the pipe in compacted lifts not to exceed 4-inches until the pipe is covered with a minimum of 24-inches of soil-cement. The gradient of the ramp shall be limited to a maximum of 10 percent. The soil-cement fill shall be brought up evenly on both sides and for the full length of the pipe along the soil-cement facing. Vibratory compacting equipment shall be used to obtain not less than 98 percent of maximum density as determined by ASTM D 558. Soil-cement shall conform to the specifications set forth in Section 221.

601.6 - Payment

No pay item shall be included in the proposal for trench excavation, backfilling and compaction, the cost being considered incidental to the relevant items in the Bid Schedule for Item 610 and Item 618.

SECTION 610 - WATERLINE CONSTRUCTION

In addition to the requirements of the Standard Specifications.

610.1 - Description

The work entails the construction of a new sixteen (16) inch waterline relocated beyond the channel banks and below the channel flowline. The waterline is located within the City of Peoria and is currently just south of the Olive Avenue bridge. Along the new 99th Avenue Realigned, existing waterline valve boxes shall be relocated to match new pavement grades.

610.9 - Connection to Existing Mains

The 16-inch waterline is currently in service and is maintained by the City of Peoria. The Contractor shall make arrangements with the City of Peoria Water Service Department before making any connections to the existing system and before removal of the existing line from service.

610.18 - Measurement and Payment

(A) Pipe:

1. Measurement of the pipe shall be by the linear foot of pipe installed, inclusive of all fixtures and fittings, tapping sleeves, mechanical joints, strapping and thrust blocks necessary to connect to the existing waterline. Measurement shall be to the nearest 0.1 foot. No separate measurement will be made for removal of the existing 16-inch waterline or concrete slurry cap protection. The cost being considered included under Section 350 - Removal of Existing Improvements.

2. Payment will be made at the Contract unit price bid per linear foot for the material type specified on the Design Plans per Item 610-1 of the Bid Schedule.

(C) Relocation of existing meters and boxes: Measurement shall be for the number of valve boxes moved and reinstalled. Payment will be made at the Contract unit price bid for each valve box relocated and installed under Item 610-2 of the Bid Schedule.

SECTION 618 - STORM DRAIN CONSTRUCTION WITH CONCRETE PIPE

In addition to the requirements of the Standard Specifications:

618.1 - Description

The work under this section shall consist of furnishing and installing reinforced concrete pipe, at the locations and to the grades and slopes indicated on the plans.

Storm drainage for this project entails the installation of side drainage inlet pipes for ponding areas behind the soil-cement banks. Two existing 54-inch storm drains will be extended, one at Glendale Avenue and one at Station 123+00±. In addition, a 54-inch pipe stub will be provided at Olive Avenue for the connection of a future storm drain along Olive Avenue.

Concrete pipe collars shall be used for connecting to existing storm drain lines, where deflection angles are encountered.

618.2 - Materials

All storm drainage pipe connections and side drainage inlet culverts shall be constructed from rubber gasketed reinforced concrete pipe (R.G.R.C.P.), manufactured in accordance with ASTM C-76. All pipe shall be minimum Class III; a stronger pipe may be used at the Contractor's option at no additional cost to the District.

618.3 - Construction Methods

Excavation, bedding, backfilling, and compaction or consolidation of backfill and bedding of trenches shall be accomplished in accordance with Section 601 of these Special Provisions.

618.5 - Measurement

Reinforced concrete pipe will be measured by the linear feet of pipe laid, measured along the pipe axis from face of outlet headwall to face of inlet structure or end of existing pipe connection.

Concrete pipe collars will be measured by the unit each as shown on the design plans and Bidding Schedule.

618.6 - Payment

Reinforced concrete pipe will be paid for at the Contract unit price per linear foot as provided above, for each size and strength of pipe, complete and in place for Item 618-1 through Item 618-8 in the Bid Schedule.

Pipe plugs will be paid for at the unit prices for each per Item 618-9 and Item 618-10 in the Bid Schedule.

Concrete pipe collars will be paid for at the unit prices for each per Item 618-11 through Item 618-13 in the Bid Schedule.

These prices shall be compensation in full for furnishing and installing, or relocating, the various items as specified and shown on the plans, including: removal of existing headwalls and trash racks, trench excavation, bedding, compacting, backfilling, joint materials, joining, collars, stubouts, field closures and testing.

SECTION 630 - TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATERLINES

In addition to the requirements of the Standard Specifications.

630.1 - Description

Work entails the removal and relocation of an existing fire hydrant outside of the proposed 99th Avenue Realigned pavement limits. Included in this item shall be the salvage of the existing fire hydrant and installation of new six (6) inch ductile iron pipe (D.I.P.).

630.8 - Measurement

Measurement will be by the lump sum for hydrant relocation, thrust blocking, new 6-inch line installation and connection to existing waterline.

630.9 - Payment

Payment will be at the Contract unit price by the lump sum per Item 630 in the Bid Schedule.

SECTION 787 - GRAY IRON CASTINGS

In addition to the requirements of the Standard Specifications.

787.1 - General

This work shall consist of the supply and installation of flapgates at the locations as shown on the design plans. Flapgates shall be of the sizes indicated and constructed for a minimum 20-foot seating head.

787.1.01 - Materials

Frames and covers shall be cast iron or cast steel. Seating surfaces shall be bronze or ductile iron. Links may not be cast iron, steel, or high strength malleable iron. Bushings shall be bronze. Fasteners shall be galvanized steel, bronze, or corrosion-resistant steel. Gates shall have fully adjustable linkage.

787.1.02 - Tolerances

In general, new flapgate tolerances for machine-finished surfaces designated by nondecimal dimensions shall be within 1/64 inch. Sufficient matching stock shall be allowed on placing pads to insure true surfaces of solid material. Finished contact or bearing surfaces shall be true and exact to secure full contact. All drilled holes for bolts shall be accurately located and drilled from templates. Bolt holes shall be reamed normal to the member and shall be truly cylindrical throughout. Unless otherwise specified, holes for bolts shall not be more than 0.2 inch larger than the diameter of the bolt.

788.1.03 - Installation

Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place. Anchorage not otherwise specified or indicated shall include slotted inserts, expansion shields, and powder-driven fasteners when approved for concrete. Slotted inserts shall be of types required to engage with the anchors and shall be approved.

Each gate shall be rigidly secured in place with seating faces inclined from the vertical by approximately three (3) degrees. Installation of gates shall be as recommended by the gate manufacturers. Fasteners of the size recommended by the gate manufacturer shall be utilized in assembly of gate and to secure the gates to the frame. The gates shall be so constructed as to prevent locking in any partially open position.

787.1.04 - Cleaning

All oil and grease shall be removed. When required, welds shall be neutralized by the use of ammonia or other suitable agent. All surfaces to be painted shall be cleaned in the shop to remove all rust, scale, dirt, and other foreign matter. "Tight" mill scale, that cannot be lifted by applying a sharp knife to any edge, will be permitted. The cleaning

shall be accomplished by scraping, wire brushing, and wiping or other approved methods. The cleaning and painting operations shall be carried on in such a manner that the time between cleaning and the application of the paint will not exceed 24 hours.

787.7 - Asphaltum Coating

All exposed metal surfaces of flapgates shall be painted or dipped in commercial-quality asphaltum paint, as approved by the Environmental Protection Agency. The paint shall be applied heavily by brush, at a coverage rate of approximately 100 square feet per gallon to give a total film thickness of three (3) coats of 1/32 of an inch. If painted, each additional coat shall be brushed perpendicularly to strokes of preceding coat. Drying time between coats shall be as recommended by manufacturer of coatings.

787.7 - Measurement

Flapgates will be measured by the unit size installed, placed at the locations shown on the plans or as directed by the Engineer.

787.8 - Payment

Flapgates will be paid for at the Contract unit price per each for Item 787-1 through Item 787-6 of the Bid Schedule. These prices shall be full compensation for the work, including furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and placing the materials, complete in place, as shown on the plans, specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.