

CONSTRUCTION SPECIFICATIONS

FOR

EAST MARICOPA FLOODWAY REACH 6 LANDSCAPING

FCD CONTRACT NO. 91-21

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

CONSTRUCTION SPECIAL PROVISIONS

Prepared By:

DANIEL, MANN, JOHNSON, AND MENDENHAL
300 West Clarendon
Phoenix, Arizona 85013



Prepared For:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
and

Recommended By: Edward A. Raleigh Date: 7/18/91
Edward A. Raleigh, P.E., Chief
Engineering Division

Approved By: Stanley L. Smith Jr. Date: 7-18-91
STANLEY L. SMITH JR., P.E.
DEPUTY CHIEF ENGINEER
D.E. Sagramoso, P.E.
Chief Engineer and General Manager

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

ADDENDUM 1

AUGUST 12, 1991

FCD CONTRACT NO. 91-21

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To Contract Documents

Title: East Maricopa Floodway Reach 6 Landscaping

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. 1 forms a part of the Contract Documents and modifies them as follows:

TO CONSTRUCTION SPECIAL PROVISIONS

DELETE: Third paragraph titled "Specifications:" on page SP-1 of 20.

ADD: "SUBSECTION 430.5.2 - PLANT INSPECTION PRIOR TO DELIVERY TO SITE: IS MODIFIED TO ADD:

Containerized plants shall be healthy, shapely, and well rooted, with roots showing no evidence of having been damaged, restricted, or deformed. Plants shall be vigorous and free of disease, insect pests, eggs, or larva.

Quality and size of plants shall be in accordance with rules and grading adopted by the American Association of Nurserymen, Inc., the Arizona Nursery Association, and included in the American Standard for Nursery Stock. Plant materials shall be grown in nurseries which have been inspected by the State Department of Agriculture and have complied with the regulations thereof. Inspection certificates shall be submitted to the Engineer. The Contractor shall obtain clearance from the County Agricultural Commissioner, as required by law, before planting plants delivered from outside the county in which they are to be planted. Evidence that such clearance has been obtained shall be filed with the Engineer."

DELETE: SUBSECTION 430.5.6. and SUBSECTION 430.5.6.2.

REPLACE with the following:

"SUBSECTION 430.5.6 - SHRUB AND TREE PITS: IS MODIFIED TO ADD:

The side of the tree pit shall be vertical for the lower half and tapered for the upper half, slightly scarified, and the bottom shall be loosened to a minimum depth of 2 inches.

ADDENDUM 1

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PAGE 2 of 3

Backfill mixture shall consist of 1 part of mulch and 2 parts soil by volume. Add, per 5 gallon, 15 gallon and 24" boxed plant pits, 1/4 pound of fertilizer, 1 pound of gypsum, and 1/2 pound of soil sulfur.

For one gallon plant pits, use 1/2 the amounts of fertilizer, gypsum and sulphur. Planting backfill mix shall be thoroughly blended to homogenous mixture prior to use in backfilling operations.

Gypsum shall be agricultural gypsum, composed of calcium sulfate. Gypsum shall be 90 percent pure, free of any toxic materials, and at least 95 percent by weight shall pass a 4-mesh sieve.

Soil Sulfur: Soil Sulfur shall be grained agricultural sulphur containing 99.5% sulfur.

Where fertilizer is furnished from bulk storage, the Contractor shall furnish a supplier's certification of analysis and weight. Fertilizer shall be a hard prill type fertilizer, which is uniform in composition, pelleted, dry, and free flowing. Guaranteed usable analysis of fertilizer shall be as follows:

Ammoniacal nitrogen (N).....	16.0%
Available phosphoric acid (P2O3).....	8.0%
Water soluble potash (K2O).....	4.0%
Sulfur (S).....	18.0%
Iron (Fe, chelated).....	1.5%
Maganese (MN, chelated).....	0.1%
Zinc (ZN, chelated).....	0.1%"

DELETE third paragraph of SUBSECTION 431.4.1 - SEEDING AND MULCHING:

REPLACE with the following:

"Decomposed granite shall then be uniformly applied at the specified thickness over the seeded areas and shall be applied within 24 hours after the seeding has been performed."

DELETE first sentence, fourth paragraph of SUBSECTION 431.4.1 - SEEDING AND MULCHING:

REPLACE with the following:

"The seeding mixture and the application rates are listed in the plans."

ADDENDUM 1

AUGUST 12, 1991

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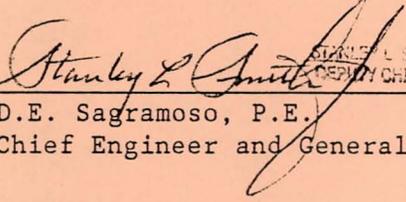
PAGE 3 of 3

DELETE first sentence, second paragraph of SECTION 791 - CHEMICAL STAIN: IS MODIFIED TO ADD:

REPLACE with the following:

"The Contractor shall prepare a sample area of approximately 10 square feet of stained soil cement and stained concrete for the owner's approval."

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

By  STANLEY L. SMITH JR., P.E.
DEPUTY CHIEF ENGINEER
D.E. Sagramoso, P.E.
Chief Engineer and General Manager

EAST MARICOPA REACH 6 LANDSCAPING
FCD CONTRACT 91-22
PRE-BID MEETING MINUTES

The pre-bid meeting for FCD 91-22 was held at the Flood Control Office at 9:00AM, August 8, 1991. Attendees are listed on the attached attendance roster.

The following is a recapitulation of questions/problems and the Districts' response:

QUESTION: Section 430.5.6.2 states that the soil sulfur is to broadcast to certain dimensions around the plants and tilled into the soil. Will the District reconsider this requirement?

RESPONSE: Section 430.5.6.2 will be modified in the addendum.

PROBLEM: The District stated that there is a conflict in the Construction Specifications. Page SGC-1, first paragraph is in conflict with page SP-1, third paragraph.

RESPONSE: The third paragraph on page SP-1 will be deleted in the addendum.

QUESTION: Is there a bid item for the concrete header shown on sheet 4 of 32?

RESPONSE: Yes, bid item 795811.

PROBLEM: Sheet 28 of 32, detail "D", shows 3" to 6" river rock protection around inlet structures and there is no bid item or quantity for this item.

RESPONSE: The inlets where this detail is required, are shown on the plan sheets. The river rock may be bid incidental to the 1/2" minus D.G., bid item 795840.

PROBLEM: Sheet 12 of 32 indicates that asphalt is to be removed. The plans do not indicate to what depth.

RESPONSE: The depth of material removal should be sufficient for installation of the concrete pavers. Reference Detail B-B on sheet 30 of 32.

QUESTION: Sheet 12 of 32 states that mounding should be used to achieve required soil depths. What are the required soil depths?

RESPONSE: Note 17 on sheet 3 of 32 gives the required information.

QUESTION: Sheet 12 of 32 illustrates an area to receive hand watering by the contractor until FCD assumes maintenance responsibilities. When will FCD assume these responsibilities?

RESPONSE: FCD will assume responsibility for plant maintenance on the project at the final acceptance of the project or the completion of the plant establishment period, whichever occurs later. (Reference MAG 430.8 and 430.9)

QUESTION: What will happen if a flood comes through the project and destroys the contractors work to date?

RESPONSE: The contractor is responsible for protecting the worksite. The majority of the work in this contract is above the 100 year flood level and will only be subject to nuisance flows.

QUESTION: Is it permissible to bid item 314000, Stabilized D.G. as mixed on site?

RESPONSE: No, we require the item to be bid as it is stated in the special provisions, section 314.3, page SP-2.

PROBLEM: Section 791 states that the sample area of soil cement may be part of the area requiring such application. There is no similar language for the sample area of concrete.

RESPONSE: Section 791 will be modified to include concrete.

QUESTION: Is there a set location for the contractors yard? Is the contractor required to have a trailer on site with a telephone?

RESPONSE: The contractor may set his yard up on site. There is no requirement for the contractor to have a trailer or telephone on site.

QUESTION: Who is responsible for securing the job-site?

RESPONSE: The only access to the job-site is through the pedestrian access points. It will be the contractors responsibility to secure the site.

QUESTION: What is the bidding range of this project?

RESPONSE: The bidding range is \$750,000. to \$1,000,000.

CONSTRUCTION SPECIFICATIONS

FOR

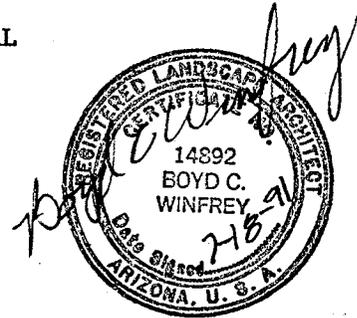
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ATTENTION

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 be considered nonresponsive.

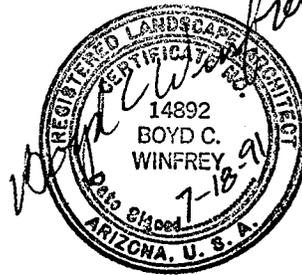
Please take note and submit your bids accordingly.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT 91-21

EAST MARICOPA FLOODWAY REACH 6 LANDSCAPING

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION TO BID

BID OPENING DATE: August 22, 1991

LOCATION:

This project parallels the Roosevelt Irrigation District Canal from Broadway Road east of Higley Road to a point 800 feet north of Brown Road west of Higley Road, Mesa, Arizona.

PROPOSED WORK:

The work consists of furnishing all materials and constructing a complete and functioning irrigation system, planting trees, shrubs, ground cover, constructing a maintenance road and other miscellaneous items of work required for the completion of the project.

BIDS:

SEALED BIDS for the proposed work will be received by the Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona 85009 until 2:00 p.m. (Phoenix time) on the above date and then publicly opened and read at 3335 W. Durango St., Phoenix, AZ 85009. No bids will be received after the time specified for bid opening. All bids must be submitted on proposal forms furnished by the Flood Control District and included in the Proposal Pamphlet. The Board of Directors reserves the right to reject any and all bids and to waive any informality in any bid received.

ELIGIBILITY OF CONTRACTOR:

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

The bidder shall be required to certify that it is appropriately licensed as a Contractor in the State of Arizona for performing the before-mentioned type of work. Verification shall be on the form provided herein.

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

CONTRACT TIME:

All work on this Contract is to be completed within one hundred eighty (180) calendar days after date of Notice to Proceed.

MBE/WBE PARTICIPATION:

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

PRE-BID CONFERENCE:

A pre-bid conference will be held on August 8, 1991 at 9:00 a.m. in the Flood Control District conference room, 3335 W. Durango Street, Phoenix, Arizona 85009. It is in the best interest of prospective bidders to attend the Pre-bid Conference.

Questions or items for clarification may be addressed to the Chief, Contracts Branch, in writing, at least ten (10) days prior to bid opening date. Where appropriate, any answers or clarifications affecting the cost may be addressed to all bidders in an addendum. Under no circumstances will verbal interpretations or clarifications be given to individual contractors.

PROJECT PLANS, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS:

Plans and Construction Specifications may be obtained from Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona 85009 upon payment of \$22.00 by check, payable to the FLOOD CONTROL DISTRICT of MARICOPA COUNTY. This payment will not be refunded. Mail orders for project documents must include an additional \$7.50 for first class U.S. postage and handling. The total \$29.50 will not be refunded. Regardless of circumstances, we cannot guarantee mail delivery. Each bid must be accompanied by a Bid Bond, cashier's or certified check or postal money Order equal to 5 percent (5%) of the bid, made payable to the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY as a guarantee that if the work is awarded to the bidder, the bidder will within ten (10) days of receipt of the Proposal Acceptance, enter into proper contract and bond condition for the faithful performance of the work, otherwise, said amount may be forfeited to the said BOARD OF DIRECTORS as liquidated damages.

All bids are to be marked in accordance with Section 102.9 of the Uniform Standard Specifications and addressed to the Chief Engineer and General Manager, Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona 85009.

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

PRINCIPLE ITEMS AND APPROXIMATE QUANTITIES

<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
61,737	SY	Seed and Gravel Cover
147,775	SY	Decomposed Granite (1/2")
15,515	SY	Stabilized Decomposed Granite

PROPOSAL

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

Gentlemen:

The following Proposal is made for constructing FCD 91-21; East Maricopa Floodway Reach 6 Landscaping 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, or conditions to be overcome, be pled. On the basis of the Plans, Construction Specifications, Special Provisions, 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 180 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 his Proposal, if the Proposal is accepted and there should be failure on the part of the Undersigned to execute the Contract and furnish satisfactory 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 and has included their provisions in the proposal:

Addendum No. _____	Dated _____

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

BIDDING SCHEDULE

PROJECT: East Maricopa Floodway Reach 6 Landscaping
 CONTRACT: FCD 91-21

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
109200	Mobilization	1	LS			
201001	Clearing and Grubbing	1	LS			
314000	Stabilized Decomposed Granite	15,515	SY			
342340	Interlocking Concrete Pavers	8,450	SF			
350301	Removal & Disposal of Asphaltic Cement	170	SY			
350302	Fence Removal & Disposal	90	LF			
350303	Block Wall Removal & Disposal	98	LF			
404100	Water Service (2")	2	EA			
404101	Electrical Service	1	EA			
420001	6' Chain Link Fence	200	LF			
420002	Pedestrian Gate	3	EA			
424001	Grading (Relocate Drainage Swales)	1	LS			
505101	Portland Concrete Cement	11,000	SF			
510101	6' Masonry Block Wall	66	LF			
753001	Pipe (Black Steel) (2") (Sch. 40)	1,290	LF			
757221	Pipe (PVC) (1-1/2") (CL 315)	750	LF			
757222	Pipe (PVC) (2") (CL 315)	20,300	LF			
757223	Pipe (PVC) (3/4") (CL 200)	16,825	LF			
757225	Sleeves (PVC) (2"-4")	660	LF			
757240	Pipe (Polyethylene)	30,490	LF			
757322	Gate Valve (2")	19	EA			

BIDDING SCHEDULE

PROJECT: East Maricopa Floodway Reach 6 Landscaping

CONTRACT: FCD 91-21

ITEM NO.	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT COST (IN WRITING) AND /100 DOLLARS	UNIT COST (NUMBERS)	EXTENDED AMOUNT
757340	Drip Valve Assembly (1")	34	EA			
757390	Air Vent Valve	34	EA			
757360	Quick-Coupling Valves	132	EA			
757410	Backflow Prevention Unit (Reduced Pressure) (2")	2	EA			
757501	Emitter Assembly (Shrub) (2-0.5 GPH)	1,394	EA			
757502	Emitter Assembly (Tree) (8-1.0 GPH)	865	EA			
757610	Conduit (PVC) (1/-1/2") & Pullbox	23,200	LF			
757630	Automatic Control System	1	EA			
791000	Chemical Stain	4,100	SF			
795610	Seeding	29,058	SY			
795620	Seed and Gravel Cover	61,737	SY			
795730	Trees (24" Box)	90	EA			
795731	Trees (15 Gallon)	775	EA			
795740	Shrubs (5 Gallon)	347	EA			
795741	Shrubs (1 Gallon)	1,042	EA			
795742	Ground Cover (1 Gallon)	366	EA			
795743	Ocotillo	5	EA			
795811	6" x 8" Concrete Header	1,645	LF			
795840	Decomposed Granite (1/2")	147,775	SY			
795841	Decomposed Granite (3/4")	2,990	SY			

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 91-21; East Maricopa Floodway Reach 6 Landscaping.

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., 1991.

Principal

Title

Witness:

Surety

Title

Witness:

VERIFICATION OF LICENSE

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

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

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

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

DATE: _____ SIGNATURE OF LICENSEE: _____

COMPANY: _____

MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISE PROGRAM

- A. The following conditions will apply in the calculation of the percentage attainment:
1. All MBE/WBE firms used in attainment of the goal must be certified with the Maricopa County Minority Business Office which is located in the Maricopa County Highway Department building, 3325 West Durango Street, Phoenix. In addition, only those firms certified at least seven calendar days prior to the bid opening will be considered in the attainment of the goal.
 2. Prime contractor subcontracts to MBE or WBE:
The MBE/WBE amount to be applied to the goal will be based on that portion (dollar value) of the contract that the MBE/WBE performs. For example, if a prime contractor subcontracts work amounting to \$100,000 of a contract for which the total project cost is \$1,000,000. the MBE/WBE participation will be credited as 10 percent.
 3. Prime Minority Contractor:
An MBE/WBE prime contractor will be credited with the MBE/WBE participation for that portion of the contract which they themselves perform plus that portions subcontracted to other MBE/WBE firms. For example, if an MBE/WBE prime contractor proposes to perform 50 percent of a project quoted at \$1,000,000 and subcontracts 25 percent to an MBE firm and 25 percent to a non-MBE/WBE firm, MBE/WBE participation will be credited as 75 Percent, or \$750,000.
 4. Minority-Non-Minority Joint Venture:
A joint venture consisting of MBE/WBE participation and non-MBE/WBE business enterprises, functioning as a prime contractor, will be credited with minority participation on the basis of the percentage of profit accruing to the MBE/WBE firm. For example, if a MBE/WBE and non-MBE/WBE joint venture proposes to perform 50 percent of a \$1,000,000 project and 50 percent of the joint venture profits (\$500,000) are to accrue to the MBE/WBE partner in the joint venture, MBE/WBE participation will be credited at 25 percent or \$250,000.
 5. Lower Tier Non-MBE/WBE Participation:
MBE/WBE subcontractors proposing to further subcontract to non-MBE/WBE contractors shall not have that portion of subcontracting activity considered when determining the percentage of MBE/WBE participation.

6. MBE/WBE Suppliers:

Any MBE/WBE supplier that manufactures or substantially alters the material or product it supplies will have that portion of activity considered when determining the percentage of MBE/WBE participation. Any MBE/WBE Wholesaler, Distributor, or Jobber that does not manufacture or substantially alter the materials or product it sells will be limited to 20 percent of the sale price when determining the percentage of MBE/WBE participation.

B. Required forms:

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

C. Requests for Pay:

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

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

MBE/WBE PARTICIPATION ASSURANCES
AFFIDAVIT

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

(the entity submitting the bid)

(CHECK ONE)

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

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

_____ Will not participate in the MBE/WBE Program.

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

Name of Firm

Signature

Title

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

Name of Prime Contractor

FCD 91-21

Project Number

Contact Person

Total Amount of Contract

Street No.

City State Zip

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

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

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

Copy to: Minority Business Office
Maricopa County Highway Department
3325 West Durango Street
Phoenix, Arizona 85009

FCD Contract 91-21

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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: East Maricopa Floodway Reach 6
Landscaping

Contract Number: 91-21
For Pay Period of: _____

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

Type of Firm: _____
Class of Work: _____

Subcontract Amount: _____
Amount Earned
(Commission) This Period: _____
Total Earned by This Subcontractor: _____

Total MBE/WBE Contract Goal, %: 15
Total Cumulative MBE/WBE
Participation on This Contract, %: _____

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

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

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 1991, 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 91-21; East Maricopa Floodway Reach 6 Landscaping, and furnish at his own cost and expense all necessary machinery, equipment, tools, apparatus, materials, and labor to complete the work in the most substantial and workmanlike manner according to the Plans and Construction Specifications on file with the Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona, and such modifications of the same and other directions that may be made by the Flood Control District of Maricopa County as provided herein.

ARTICLE II - CONTRACT DOCUMENTS: The Construction Specifications (Invitation to Bid, Plans, Standard Specifications and Details, 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 his own proper cost and expense, to do all work as aforesaid for the construction of said improvements and to completely construct the same and install the material therein, as called for by this agreement free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified within the time, or times, stated in the proposal pamphlet.

ARTICLE IV - PAYMENTS: For and in consideration of the faithful performance of the work herein embraced as set forth in the Contract Documents, which are a part hereof and in accordance with the directions of the OWNER, through its Engineer and to his satisfaction, the OWNER agrees to pay the said CONTRACTOR the amount earned, computed from actual quantities of work performed and accepted or materials furnished at the unit bid price on the Proposal made a part hereof, and to make such payment in accordance with the requirements of A.R.S. Sec. 34-221, as amended. The CONTRACTOR agrees to discharge its obligations and make payments to its subcontractors and suppliers in accordance with A.R.S. Sec. 32-1129.

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

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

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

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

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

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

PARTY OF THE FIRST PART

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PARTY OF THE SECOND PART

BY: _____
Printed Name

BY: _____
CHAIRMAN, BOARD OF DIRECTORS

BY: _____
Signature

DATE: _____

Title
DATE: _____

Tax Identification Number

RECOMMENDED BY:

CHIEF ENGINEER AND GENERAL MANAGER
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

ATTEST:

CLERK OF THE BOARD

DATE: _____

LEGAL REVIEW

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

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

DATE: _____

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

KNOW ALL MEN BY THESE PRESENTS:

That, _____
(hereinafter called the Principal), As Principal, and _____

_____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ (hereinafter called the Surety), as Surety, are held and firmly bound unto the Flood Control District of Maricopa County, in the County of Maricopa, State of Arizona (hereinafter called the Oblige), 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 _____, 1991, for FCD Contract 91-21; East Maricopa Floodway Reach 6 Landscaping, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall promptly pay all monies due to all persons supplying labor or materials to him or his subcontractors in the prosecution of the work provided for in said contract, then this obligation shall be void, otherwise to remain in full force and effect.

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

The prevailing party or any party which recovers judgement on this bond shall be entitled to such reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this _____ day of _____, 1991.

PRINCIPAL SEAL

BY: _____

AGENCY OF RECORD

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 _____, 1991, for FCD Contract 91-21; East Maricopa Floodway Reach 6 Landscaping, 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 _____, 1991.

AGENCY OF RECORD

AGENCY 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 91-21

PROJECT TITLE EMF Reach 6 Landscaping

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 <input checked="" type="checkbox"/> LIABILITY FORM <input checked="" type="checkbox"/> PREMISES OPERATIONS <input checked="" type="checkbox"/> CONTRACTUAL <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> EXPLOSION & COLLAPSE <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> UNDERGROUND HAZARD <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS <input checked="" type="checkbox"/> PERSONAL INJURY			BODILY INJURY per person	1,000
	COMPREHENSIVE AUTO <input checked="" type="checkbox"/> LIABILITY & NON-OWNED			SAME AS ABOVE	
	<input type="checkbox"/> EXCESS LIABILITY			NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	
	<input checked="" type="checkbox"/> WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY			STATUTORY each accident	\$100
	<input checked="" type="checkbox"/> OTHER	The Flood Control District of Maricopa County, Maricopa County, and the City of Mesa shall be named as additional insureds.			
	<input type="checkbox"/> OTHER				

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

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 3335 West Durango Street
 Phoenix, Arizona 85009

DATE ISSUED _____

AUTHORIZED REPRESENTATIVE _____

It is further agreed that:

The Contractor hereby agrees to indemnify and save harmless the Flood Control District of Maricopa County, Maricopa County, and the City of Mesa, or any of its departments, agencies, officers or employees, from and against all loss, expense, damage or claim of any nature whatsoever which is caused by any activity, condition or event arising out of the performance or nonperformance of any of the provisions of this Agreement. The Flood Control District of Maricopa County, Maricopa County, and the City of Mesa 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, and the City of Mesa. The above cost of damages incurred by the Flood Control District of Maricopa County, Maricopa County, and the City of Mesa or any of its 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 91-21

SUPPLEMENTARY GENERAL CONDITIONS

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 one hundred eighty (180) calendar days after receipt of 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 his 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 his proposed commercial sources prior to use, and shall present certificates stating that the material produced from any commercial sources is in accordance with the Uniform Standard Specifications and these Supplementary General Conditions.

Subsection 101.2 - Definitions and Terms:

1. Change the definition of the phrase "Board of Supervisors" to being the Board of Directors acting under the authority of the laws of the State of Arizona and in their capacity of the Board of Directors of the FCDMC.
2. Change the definition of the phrase "Budget Project" to being a project financed by funds set aside in the annual budget or otherwise approved by the FCDMC Board of Directors.
3. Add to the definition of the phrase "Contract Documents", the phrase "Supplementary General Provisions".
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 his 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 his 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.

Subsection 102.2 - Contents of Proposal Pamphlet: In case of a discrepancy or conflict the project plans will govern over the MCHD Supplements.

Subsection 102.5 - Preparation of Proposal: 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 602-262-1501. Any addendum issued, if not already bound into the Special Provisions, must be 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.

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

The bidder's Arizona State Contractor's License number and classifications shall be shown on the proposal. The Contractor may be required to provide certification of prior satisfactory completion for similar construction and shall include a copy of his license and the renewal certificate with the bid proposal.

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

Subsection 103.6 - Contractor's Insurance: Concurrently with the execution of the contract, the Contractor shall furnish a Certificate of Insurance using the included Certificate or one of equal wording, that names the additional insureds as set out in the 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 105.6 - 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 Contractor's operations result in damage to any utility the location of which has been brought to his 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 proper personnel:

Flood Control District.....262-1501
US West Communications.....831-4647
Salt River Project.....236-2765
Location Staking (Mtn. Bell,S.R.P.).....263-1100
Maricopa County Highway Department.....233-8600

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

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

Subsection 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.

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

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

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

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

Subsection 109.2 - Scope of Payment:

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

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

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

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

1. Both progress and final pay estimates will be initially processed by the FCDMC's Construction and Operations Division on Tuesdays only, Tuesdays being the only day the Contractor may submit a pay estimate.

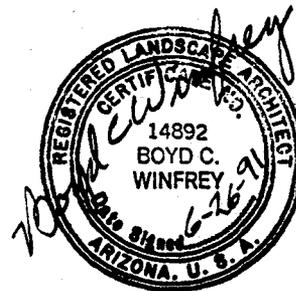
CONSTRUCTION SPECIAL PROVISIONS

MARICOPA COUNTY PROJECT

FOR THE

EAST MARICOPA FLOODWAY REACH 6 LANDSCAPING

FCD No. 91-21



LOCATION OF THE WORK:

This project parallels the Roosevelt Irrigation District Canal from Broadway Road north to a point 800 feet north of Brown Road.

PROPOSED WORK:

The work consists of furnishing all materials and constructing a complete and functioning irrigation system, planting trees, shrubs, ground cover, constructing a maintenance road and other miscellaneous items of work required for the completion of the project.

SPECIFICATIONS:

The work embraced herein and as shown on the plans for the construction of this project shall be done in accordance with the Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction dated 1979, the MAG Uniform Standard Details for Public Works Construction dated 1979, the Maricopa County Highway Department (MCHD) Supplements to the Uniform Standard Specifications dated August 3, 1981, and the Construction Special Provisions contained herein. The latest published editions, including published revisions thereto of the above described documents shall be included.

SECTION 314 - STABILIZED DECOMPOSED GRANITE: IS MODIFIED TO ADD:

The work under this item consists of furnishing all labor, equipment, tools, materials and survey and layout performing all work necessary for the installation of aggregate base course (ABC), and stabilized decomposed granite at the locations and in accordance with details shown on the project plans and these Special Provisions.

SUBSECTION 314.1 - DESCRIPTION: IS MODIFIED TO ADD:

The stabilized decomposed granite is a blended mix of 1/4" minus granite and stabilizer, manufactured by Stabilizer, Inc., Phoenix, Arizona or equal as approved by FCD Engineer.

Stabilizer shall be blended with decomposed granite at an approved blending plant to create surface course material at a rate of 12 lbs. of stabilizer per one ton of decomposed granite. The blended material is subject to sampling and testing per MAG Specification Section 106. The decomposed granite shall be Yavapai Coral in color.

<u>SIEVE SIZE</u>	<u>% PASSING</u>
3/8"	100
No. 4	98
No. 8	77
No. 16	58
No. 30	45
No. 50	32
No. 100	22
No. 200	14.6

SUBSECTION 314.2 - BASE: IS MODIFIED TO ADD:

The aggregate base course (ABC) shall conform to Section 310 and Section 702.2 (Type A) of the Uniform Standard Specifications.

The aggregate base course shall be a single layer three inches in compacted thickness.

SUBSECTION 314.3 - APPLICATION OF STABILIZED DECOMPOSED GRANITE: IS MODIFIED TO ADD:

The stabilized decomposed granite shall be delivered to the project site blended. Initial grading and leveling will leave a somewhat inconsistent surface which can then be leveled with a gannon, light drag or similar piece of equipment. The surface course shall be watered so that the moisture permeates the full 3" depth. Compaction shall commence after the moisture has permeated the 3" depth and all standing water has filtered into the decomposed granite. Compaction shall be completed by the time that dry areas appear on the surface or at the direction of the FCD Engineer. Finally, the surface course shall be compacted using a double-drum steel roller, or similar to give a final depth of 3" of decomposed granite.

Re-making of surface in small areas where significant disturbances have occurred is best carried out with a hand raked, water and hand tamp.

If re-making requires additional Stabilized decomposed granite, the repair shall be made as follows: Moisten and scarify the affected areas. Apply Stabilized decomposed granite and grade. Water through full depth of repaired area and compact as directed by the Engineer.

The Contractor shall prepare a sample area of no less than 10 square yards of stabilized decomposed granite for the Engineer's approval. The sample area may be part of the area requiring stabilized decomposed granite and this sample once approved, will be used by the Engineer to determine the acceptability of the remaining work under this item.

The stabilized decomposed granite shall be measured by the square yard in place.

SUBSECTION 314.4 - PAYMENT: IS MODIFIED TO ADD:

The stabilized decomposed granite will be paid at the unit price bid per square yard, to the nearest square yard. This shall be compensation in full for furnishing all labor, materials, equipment and installing complete in place as shown on the plans and as specified.

SUBSECTION 342.3.4 - CONCRETE PAVING STONES: IS MODIFIED TO READ:

Paving work shall be plumb; level and true to line and grade and shall be installed to properly coincide and align with adjacent work. The contractor shall lay the paving stones in a herringbone pattern.

The aggregate base shall be placed in accordance with the project plans. The aggregate base shall be a minimum of 3". Compaction of the aggregate base will be not less than 95% of the maximum density as determined in accordance with the requirements of Arizona Test Methods 225, 226, and 227.

The first 100 square foot area will be inspected and must be approved by the Engineer for quality of compaction, finish grade of sand and placement of the decorative pavement, before further work may continue.

The sand shall be compacted wet with a Roller Vibrator or Plate Vibrator. The maximum thickness of the wet screed sand shall be 1" \pm 1/8".

After all sand is in place and not more than 2 hours prior to the installation in any one section of the decorative pavement, the sand shall be treated with pre-emergent herbicide, approved by the Engineer.

A Roller Vibrator or Plate Vibrator shall be used to compact the decorative pavement and to vibrate the sand into the joints between the pavement units.

The concrete retention curbs, edgings, etc., shall be straight and on grade. All edges of decorative pavement shall butt right against the concrete header edges.

Pattern and color of the paving stones shall be Barcellona, Mystic 9" x 4-1/2" x 3-1/8" compression tested at 8,000 PSI manufactured by Stewart Block & Brick, Tucson, Arizona, or approved equal.

SECTION 401 - TRAFFIC CONTROL:

Traffic control shall conform to the applicable paragraphs of Section 401 of the MAG Uniform Standard Specifications with revisions, the County Supplement thereto and these Special Provisions.

The C.O.M. or his representative shall approve the Contractor's barricade and traffic routing plan. A working plan must be submitted to the Highway Department and receive their approval of the traffic control plan prior to beginning field operations. The Contractor shall provide a copy of the detailed traffic control plan (working plan submitted to the C.O.M.) to the DISTRICT at the pre-construction conference. The plan shall show all types of signs, and their placement.

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.

SECTION 420 - CHAIN LINK FENCES:

SUBSECTION 420.1 - DESCRIPTION: IS MODIFIED TO ADD:

Fencing location and alignment shown on the drawings are approximate. Exact alignment on which the fence will be constructed shall be field staked by the Contractor and approved by the FCD Engineer prior to installation.

The chain link fence shall stand six (6) feet above existing grade when erected, including a 6" space between the ground and bottom of fence.

SUBSECTION 420.2 - MATERIALS: See Section 772

SUBSECTION 430.1 - DESCRIPTION: IS MODIFIED TO ADD:

Protection of Property. The Contractor shall be responsible for the preservation and protection of all trees, plants, monuments, structures and paved areas from damage due to this work. In the event damage does occur, all damage to inanimate items shall be completely repaired or replaced to the satisfaction of the Engineer, and all injury to living plants shall be repaired by the Owner or such persons as he may employ to accomplish this work. All the costs of such work shall be charged to and paid by the Contractor. Open ditches left exposed shall be flared and barricaded by the Contractor. Damage caused by the Contractor to asphalt, concrete or other building material surfaces shall be repaired or replaced by the Contractor at his expense. Contractor shall restore disturbed areas to original condition.

Protection and Repair of Underground Lines. The Contractor shall be responsible for requesting the proper utility company to stake the exact location of any underground electric, gas, water, storm drains, sanitary sewers and telephone lines. The Contractor shall take whatever precautions are necessary to protect underground lines from damage, and in the event damage does occur, all damage shall be repaired by the Owner or such persons as he may employ to accomplish this work. All costs of such work shall be paid by the Contractor unless other arrangements have been made.

SUBSECTION 430.3.2.1 - GRAVEL MULCH: IS MODIFIED TO ADD:

(NOTE: PLACE SEED AND FERTILIZER PRIOR TO GRAVEL MULCH APPLICATION, SEE SUBSECTION 431.4).

SUBSECTION 430.3.2.2 - GENERAL:

The work shall consist of the application of gravel mulch over the slopes as shown on the drawings. Gravel from designated sources shall be excavated, selected, handled, and processed as necessary to meet the quality and grading requirements specified.

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

SUBSECTION 430.3.2.3 - PLACEMENT:

The gravel mulch shall be placed after surface has been seeded. The mulch shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the seed and fertilizer. The gravel mulch shall be delivered and placed in a manner that will ensure that the in-place

mulch layer shall be reasonably homogeneous and the fractions uniformly distributed.

Hand Placing of gravel cover shall be required to the extent necessary to prevent damage to the permanent works. The thickness of the gravel mulch shall be 1 inch. All rills caused by erosion shall be filled with gravel before the slopes are roughened and covered with the gravel mulch.

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

SUBSECTION 430.3.2.4 - MEASUREMENT:

The exposed surface area of gravel cover will be measured within the specified pay limits and computed to the nearest square yard.

SUBSECTION 430.3.2.5 - PAYMENT:

Payment for gravel mulch will be made on the basis of price bid per square yard of coverage to neat lines shown on the plans and measured in the field. Such payment will be considered full compensation for all labor, materials, equipment, including the use of gravel to fill erosion rills, and all other items necessary and incidental to the placement of the gravel.

No separate payment will be made for water to settle gravel.

SUBSECTION 430.3.2.6 - MATERIALS:

Gravel mulch will be graded material and shall be free of debris, fines, and soil particles. Gravel mulch will consist of a combination of crushed and rounded material with a minimum of 50 percent by weight crushed material. Crushed rock shall have at least three (3) fractured faces. A sample must be approved by the Engineer prior to delivery to site.

SUBSECTION 430.3.2.7 - SOUNDNESS:

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

SUBSECTION 430.3.2.8 - GRADING:

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

Size of Opening
3/4 inches
No. 4

Percentage Passing Sieve
90-100
0-5

SUBSECTION 430.3.2.9 - COLOR:

Gravel mulch color shall be natural desert. Color shall be approved by the Engineer prior to delivery to site.

SUBSECTION 430.3.2.10 - MEASUREMENT AND PAYMENT: IS MODIFIED TO ADD:

Decomposed granite will be measured by the square yard of material in place at the specified thickness. Decomposed granite will be paid for at the unit bid price per square yard, this shall be compensation in full for furnishing and installing complete in place as shown on the plans as specified.

SUBSECTION 430.4 DECOMPOSED GRANITE AREA: IS REVISED TO READ: The decomposed granite shall be 1/2" minus; "desert gold in color" and a minimum depth of 1-1/2 inches. Paragraph two (2), sentence two (2) is deleted.

SUBSECTION 430.5.6. - SHRUB AND TREE PITS: IS MODIFIED TO ADD:

This work consists of furnishing and placing soil sulfur as shown on the plans, in accordance with this Specification and Special Provisions.

SUBSECTION 430.5.6.2 - CONSTRUCTION METHOD: IS MODIFIED TO ADD:

Soil sulfur shall be broadcasted at each tree to a diameter of 10' and each shrub to 5' diameter at the rate of 10 lbs./1000SF. The soil sulfur shall be tilled to a depth of 8" and then watered.

SUBSECTION 430.10 - MEASUREMENT AND PAYMENT: IS MODIFIED TO ADD:

The unit prices established on the Bid Schedule shall be full compensation for furnishing all labor, materials, tools, and equipment and for performing all work necessary to complete the landscaping operation to include planting of trees, shrubs, ground cover and applying soil sulfur.

SUBSECTION 431.4 - SUBGRADE PREPARATION: All rills previously filled with gravel cover will require no further subgrade preparation.

On sites where equipment can safely operate, (generally slopes 3.5:1 or flatter), the seed bed shall be adequately loosened (4 to 6 inches deep). Disk in or culti-packing or both may be necessary, as determined by the Engineer.

On sites where equipment cannot safely operate, the seed bed shall be prepared by hand by scarifying to provide a roughened surface so that broadcast seed will stay in place.

Finish surface for both equipment and hand tilled areas shall be left in a roughened condition as approved by the Engineer. This is the surface that would normally result from the tillage operations.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance shall be removed or disposed of as directed by the Engineer.

Seed bed preparation shall be discontinued when soil moisture conditions are not suitable for the preparation of a satisfactory seed bed as determined by the Engineer.

SUBSECTION 431.4.1 - SEEDING AND MULCHING: First, the fertilizer shall be dry broadcasted at a rate of 100 pounds per acre with uniform coverage. The application method shall be approved by the Engineer.

Next, the appropriate seed mix shall be applied in areas designated on the plans. All seeding operations shall be performed in such a manner that the seed is applied in the specified quantities uniformly on the designated areas. The method and rate of seed application shall be as specified in this Section. Seeding shall be completed within 2 days after approval of the subgrade preparation is given.

Straw mulch shall then be uniformly applied at the rate of 2 tons per acre to the designated areas and shall be applied to the seeded areas within 1 work day after seeding has been performed. Do not apply straw mulch in gravel mulch areas.

The seeding mixture and the application rates are listed below. Seeding rates are specified in pure live seed quantities (PLS). Alternates are provided or use when certain species are not available. Any change to the seed mixture by substitution of any alternative species shall be approved by the Engineer.

SUBSECTION 440.1 - GENERAL: IS MODIFIED TO ADD:

The manufacturer's literature on the following materials and equipment to be furnished under this specification shall be submitted for approval with a guarantee for a period of one year from the date of acceptance thereof, either for beneficial use or final acceptance, whichever is earlier, against defective materials, design, and workmanship:

- Automatic controller, enclosure and any other components listed herein and on the project drawings
- Backflow prevention units
- Control valves
- Emitters and drip line

Fertilizer injector unit
 Flow sensor
 Filter units
 Flush valves
 Gate valves
 Pressure sensor
 Pressure regulator
 PVC pipe and fittings
 Quick coupling valves and keys
 Water meters

VARIATION IN ARRANGEMENT OF IRRIGATION EQUIPMENT from those shown on drawings will be permitted. If such variation is made, the Contractor shall submit a shop drawing for approval in accordance with the SPECIAL CLAUSES. If any conflicts occur necessitating departures from the contract drawings, details of departures, hydraulic calculation and reasons shall be submitted as soon as practicable for written approval of the Engineers. Hydraulic calculations shall include application rate per hour, layout for emitters (dripline) for design flow rate and pressure, and friction loss through pipe fittings, valves and accessories.

Upon completion of the installation of the irrigation system and appurtenances, all debris and surplus materials resulting from the work shall be removed.

SUBSECTION 440.1 - GENERAL: PARAGRAPH THREE (3) IS REVISED TO READ:

The City of Mesa Water Department will furnish water meter. The Contractor shall furnish and install concrete meter box, cover, and curb stop and pipe to the curb stop. The work will be done at the locations shown on the project plans.

At least 4 weeks in advance of the time that the installation is required, the contractor shall contact the City of Mesa Public Works Service Desk and make application for the work to be performed.

Payment for the work shall be made by the contractor at the time of application. The contractor may contact the City of Mesa Utilities Department at (602) 644-2231 to ascertain the current price for a water service tap.

From the time the water meter is installed, the FCD shall be the customer for the water at no charge.

SUBSECTION 440.1 - GENERAL: PARAGRAPH TWO (2) IS REVISED TO READ:

The contractor shall furnish all materials and install new conduit, conductors, and pull boxes, junction boxes, including boring, excavating and backfilling between the utility service point of connection and the new irrigation controller enclosure at the locations designated of the project plans.

<u>CONTROLLER #</u>	<u>AGENCY</u>	<u>CONTROLLER ADDRESS</u>	<u>UTILITY</u>
1.	FCD	5209 E. Main	SRP

Immediately following the award of contract and prior to the beginning of work, the contractor shall contact Salt river Project (SRP), schedule planner at (602) 236-8741 and make necessary arrangements for service connections. The contractor shall pay all costs related to providing electrical service, including but not limited to the cost of required electrical service deposits and turn-on fees and shall pay all service charges until the completion of the establishment period of the contract. The contractor shall be identified as the customer on the application. Upon completion of the establishment period, the service account will be transferred over to the FCD and the FCD will assume the service cost.

SUBSECTION 440.3 - PIPE INSTALLATION: IS MODIFIED TO ADD:

Pipe accessories shall be handled so as to insure delivery to the trench in sound, undamaged condition. The interior of pipe and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved method. Before installation, the pipe shall be inspected for defects. Material found to be defective before or after laying shall be replaced with sound material at no additional cost to the FCD.

Tracer wire or tracer tape shall follow the main line pipe lines and terminate in the valve box with the gate valve that controls these main irrigation lines. Provide enough length of wire or tape to make a loop and attach a plastic label with the designation "Tracer Wire."

Plastic Pipe shall be installed in accordance with the procedures recommended in ASTM D 2774 and as herein specified.

Galvanized Steel Pipe. Threaded joints shall be made tight with a stiff mixture of graphite and oil, inert filler and oil, or with an approved graphite compound, applied with a brush to the male threads only. Compounds shall not contain lead.

Connections between different types of pipe and accessories shall be made with transition fittings approved by the FCD Engineer.

Pipe Sleeves shall be installed with a minimum of off-set at the joints to permit easy installation and removal of the irrigation lines. All plastic lines shall be installed in sleeves under paved areas, spillways, and other structures. Sleeves shall extend at least 12 inches beyond the edges of the pavement or structure. Sizes of sleeves shall be as follows:

Pipe Size (inches)	Minimum Sleeve Size (inches)
1/2	2
3/4	2-1/2
1, 1-1/4 and 1-1/2	3
2 and 2-1/2	4
3 and 4	6

Piping located under area where paving, asphaltic concrete, or concrete will be installed, shall be bedded with sand (a layer six inches (6") below the pipe and three inches (3") around the pipe). Compact approved backfill material in six-inch (6") lifts to 95 percent or maximum density determined in accordance with AASHTO T 180, using manual or mechanical tamping devices. Contractor shall set in place, cap and pressure test all irrigation piping under paving, in presence of FCD Engineer, prior to the paving work. Where any cutting or breaking of sidewalks and/or concrete is necessary, it shall be done and replaced by the Contractor as part of the contract cost. Permission to cut or break sidewalks and/or concrete shall be obtained from the FCD Engineer prior to commencement of any cutting. If during the warranty period there is any settling or heaving of any paved areas as a result of the piping installation, the Contractor shall immediately restore the paved area to its original condition. The damaged paving shall be removed 24 inches beyond the edges of the damaged area. The trench backfill shall be re-excavated, the area re-backfilled and re-compacted in lifts, according to specifications, then the paving is to be replaced.

Bridge Crossing. Mainline bridge crossing shown on the project drawings to be executed as follows:

Secure piping to box culvert with pipe straps and anchor bolts 24 inches O.C. Hang piping across box culvert with unistrut pipe hangers anchor bolted to underside at 24 inches O.C. Piping to be schedule 40 black steel from connection into PVC mainline across box culvert to connection back into PVC mainline. Piping to be hung a minimum 6 inches from box culvert deck edge.

Mainline crossings over bridges shall have a minimum of 18" soil cover. If soil cover is less than 18", pipe shall be galvanized steel sized as per plan.

SUBSECTION 440.4 - VALVES, VALVE BOXES, AND SPECIAL EQUIPMENT INSTALLATION: IS MODIFIED TO ADD:

Valves and valve boxes shall be installed where shown or directed, and shall be set plumb. Valve boxes shall be centered on the valves. Valves shall be located outside the area of roads and streets. Earth fill shall be carefully tamped around each valve or meter box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet. Valves shall have the interiors cleaned of all foreign matter before installation. When valve boxes are grouped together, allow at least 12 inches between boxes.

Install remote control valves in locations as shown on the drawings. Fit with plastic valve box and bolted cover. Top of valve box shall be 1/2-inch above finish grade.

Self flushing end valves with plastic boxes with locking lids, shall be provided at dead ends of all lateral lines and drip line runs.

Vent (air) Valve/Vacuum Breaker shall be for use on an irrigation piping system that will allow air to purge up to 125 psi during the fill process and with

manufacturer's written instructions in a 10-inch diameter valve box with bolttable cover. A 1/2-inch air vent shall be installed on the high point of each lateral line serving drip irrigation systems.

All material (hardware) used for mounting valve boxes, valve box covers and special equipment installation shall be in accordance with Section 771 of the MAG Standard Specifications.

SUBSECTION 440.6 - AUTOMATIC CONTROL SYSTEM INSTALLATION: IS MODIFIED TO ADD:

Automatic Controllers. Connections to items in the field unit enclosure are as follows: Drip valves are to be connected to field unit through output terminals in the order shown on plans. Surge protection is to be wired as detailed. Pressure control to be wired to one of the fourteen input terminals on field unit. Flow meter is to be connected to one of the fourteen input terminals or the field unit. Flow meter is to be connected to the flow monitor which is connected to one of the fourteen back indication on the field unit. Radio interface to be connected to field unit in enclosure and antenna mounted outside of enclosure or as detailed on the project drawings. All wiring above grade to be installed in fiberglass reinforced epoxy electrical conduit and as per local code.

Field Satellite Transceiver shall be a trunked radio and be of the same manufacturer as the irrigation controller used in the project. The radio shall be provided with a microprocessor control, audible status tones, and system privacy for efficient communication on a channel sharing the same trunked radio system. The radio shall be equipped with a durable 5dB gain performance antenna and be of the same manufacturer as the radio. The trunked radio and the antenna shall be installed according to the manufacturers recommendation and as shown on the drawings.

SUBSECTION 440.6 - PARAGRAPH TWO (2) LAST SENTENCE IS REVISED TO READ:

Enclosure Box Irrigation Controller shall be a NEMA 4, 12 gauge steel, all welded enclosure 36"(W) x 18"(D) x 48"(H) in height, having a full-gasketed hinged door, 3-point dead bolt latch mechanism, padlockable handle, and integral mounting racks compatible with specified controller, power supply and ancillary equipment. The preferred box is manufactured by Cross Brothers, Inc. and is known as a La Max Enclosure, specifically the "Arizona Box" which has additional louvers.

SUBSECTION 440.6 - AUTOMATIC CONTROL SYSTEM: IS MODIFIED TO ADD:

Conduit Box Kit shall be a weatherproof enclosure for stand-alone mounting and shall meet NEMA 4x. An opening shall be provided for a standard 1/2" conduit fitting. Mounting brackets shall be welded to the aluminum enclosure allowing surface mounting to the irrigation enclosure.

Keyboard Security Kit shall prevent unauthorized or accidental resetting of total accumulated flow, pipe diameter calibration and pulse output calibration. Special security fasteners and spanner shall be provided.

Relay Output Kit shall provide SPDT relay. The relay shall be available in 12VDC or 24VDC coil voltages. The voltage requirement shall be as shown on the project drawings.

AC Power Adapter (transformer) shall be UL approved 120 VAC outlet plug-in power supply to provide 12 VDC to the flow monitor.

Wire for Remote Control Valves. For wiring connections from remote control valve assemblies (RCV) to irrigation controller panel using type THWN/THHN dual rated wire. Wiring shall be installed in rigid PVC conduit, Class 125. All wiring connections shall be waterproofed using components such as 3M DBY Splice Kit (Scotchlock Y Electrical Spring Connector) or Rain Bird ST-03 Snap-Tight, UL Connectors and PT-S5 Sealer or as shown on the drawings.

Pull boxes shall be plastic and installed in located not subjected to vehicular traffic. Pull boxes will be installed every 200 feet, next to quick coupler boxes. Pull boxes shall have locking or boltable covers. The plastic shall be rigid combination of polyolefin and fibrous inorganic materials having the following properties.

ASTM Test	Method	Value
Tensile Strength (2.0 in. Min.)	D-638	3,400 psi
Impact Strength, Izod	D-256	0.5ft-ob/in
Shore-D Hardness	D-2240	63
Deflection Temp. @66 psi stress	D-648	230 degrees F.
Specific Gravity	D-792	1.15

Install one pull box for every 200 feet or 90 degree change in pipe direction. Gravel sump shall be installed after compaction of all trenches. Box lids shall be labeled with the words, "low voltage electrical splice", Letter size to be no smaller than one inch and no greater than 1-1/2 inch, depth of branding to be no more than 1/8 inch and no less than 1/16 inch into pull box lid.

All conduit openings in pull boxes shall be sealed with expandable foam sealer. Label all wiring in pull boxes and controller with plastic identification tags as approved by FCD Engineers.

Electrical wiring for remote control valves. The electrical wiring shall be solid, single conductor, copper wire, type UF, size recommended by the Controller Manufacturer except that minimum wire size shall be No. 14. Common wire shall be different color from all others and be minimum wire size of No. 12. Regardless of the number of location of valves connected to a single controller station, separate control wires shall be run from the controller station to each valve. Wiring from controllers to panel shall be installed in rigid conduit. Install a spare set of 2 control wires. Spare wires must be a different color.

Automatic Controller. Controller shall be mounted on embed. Connect electrical panel as shown on the drawings. Connection to control wiring shall be made within the pedestal or head of the controller. Electrical wiring shall be in a rigid conduit from controllers to panel as shown on the drawings and provided

under SECTION: ELECTRICAL WORK. The work under this section shall include all wiring to the panels or elsewhere as required, in order to complete the installation of the control system. Electrical panels shall have double-row terminal strips, Vernitron Corp. Series 2800.

SUBSECTION 440.7 - FLUSHING AND TESTING: THE THIRD PARAGRAPH IS REVISED TO READ:

(B) Coverage Test. When the emitters (dripline) system is completed the entire system shall be adjusted and to demonstrate the water coverage is complete and adequate and that the system conforms to the manufacturer's requirements and according to the plans and specifications. All deficiencies and inadequacies resulting from defective or inadequate materials and/or workmanship shall be corrected at no additional cost to the FCD. In the event any modifications to the system or deviation from the approved plans and specifications are directed, an adjustment in contract price will be made.

FIRST PARAGRAPH IS MODIFIED TO ADD:

Testing of plastic pipe shall not be done until all joints have had at least 24 hours to set and cure. During cold weather, 48 hours elapsed time shall be allowed for setting prior to testing. No water under pressure shall come in contact with any joint during the specified curing period. In hot weather, water shall not be permitted to stand in pipes until after backfilling is completed. Water used in testing shall be drained from pipes after completion of testing.

SUBSECTION 725.6 - ADMIXTURES IS MODIFIED TO READ:

All Portland Cement Concrete excluding the proposed driveway entrances shall have a color additive. The color shall be coral red as manufactured by L.M. Scofield Company or equal, and applied for manufacturer's specifications.

SUBSECTION 757.2.2 - PLASTIC PIPE IS REVISED TO READ:

Plastic Pipe shall conform to ASTM D 1785, schedule 40 for pipe with solvent welded joints and schedule 80 for pipe with threaded joints, or to ASTM D 2241, Type 1, grade 1, 315 psi for pressure lines and 200 psi for other lines for pipe with solvent welded joints. Pipe and fittings shall bear the seal of approval (nsf mark) of the National Sanitation Foundation's standard for plastic pipe and fittings for potable water service. Plastic pipe stored on the construction site shall be protected from sunlight and from dirt entering pipe.

SUBSECTION 757.2.3 - PIPE FITTINGS AND COUPLINGS IS MODIFIED TO ADD:

(B) Use of pipe dope or solvents on threaded joints will not be permitted. Fittings shall conform to ASTM D 2464 or D 2466.

(D) Polyethylene pipe shall have compression joints.

SUBSECTION 757.2.5 - POLYETHYLENE PIPE: IS MODIFIED TO ADD:

(A) 1/2" I.D. .574" to .600" wall thickness .050" to .62"

Melting point- .065 grams per 10 minutes
Plastic Recovery- 30%
Tensile strength at break- 1665 pounds per square inch
Elongation- 65%
Brittleness at 76°C- zero failures from 10 samples
Stress crack in 100% Igepol solution- zero failures from 10 samples

- (B) Polyethylene pipe (dripline) shall have a maximum length of 200 feet if the line dead ends. Maximum flow (gpm) shall not exceed the manufacturer's recommendations for pipe size indicated.

SUBSECTION 757.3.2 - GATE VALVES IS MODIFIED TO ADD:

Valve connections shall be as required for the piping in which they are installed. Valves shall have a clear waterway equal to the full nominal diameter of the valve, and shall be opened by turning counterclockwise. The operating nut or wheel shall have an arrow, cast in the metal, indicating the direction of the opening. Gate valves shall be designed for a working pressure of not less than 200 psi.

SUBSECTION 757.3.2 - GATE VALVES IS REVISED TO READ:

Valves smaller than 3 inches shall be all bronze and shall conform to Fed. Spec. WW-V-54, Type I.

Valves 3 inches and larger shall be iron body, bronze mounted, and shall conform to AWWA C500.

SUBSECTION 757.3.6 - QUICK-COUPLING VALVES: IS REVISED TO READ:

Quick Coupling Valves shall be two piece, spring-loaded, compression type, normally closed, opening against line pressure, and actuated by downward thrust against the valve. Body shall be of heavy duty brass construction. Machined parts shall be fabricated from red brass. Valve washers and sealers for key stems shall be of a semi-rigid, non-metallic, material and shall be easily replaceable. Inlets shall be tapped for National Standard pipe thread of the pipe operating pressure of 125 psi and shall be the standard product of a reputable manufacturer of quick coupling valves for lawn sprinkling systems. The Contractor shall furnish coupler keys and hose swivels for operating the valves (total of six). Rubber sleeves shall be the standard product of the manufacturer of quick coupling valves and when required they shall replace hinged cover as regularly furnished. Each sleeve shall have a cover.

SUBSECTION 757.3.7 - VALVE BOX: IS MODIFIED TO READ:

Valve boxes shall be plastic. Plastic boxes shall be a standard catalog product of a manufacturer regularly engaged in the manufacture of valve boxes. Valve boxes shall have boltable covers, bolts shall be stainless steel. Plastic shall be rigid combination of polyolefin and fibrous inorganic materials having the following physical properties:

ASTM Test	Method	Value
Tensile Strength (2.0 in. Min.)	D-638	3,400 psi
Impact Strength, Izod	D-256	0.5 ft-lb/in
Shore-D Hardness	D-2240	63
Deflection Temp. @ 66 psi stress	D-648	230 degrees F.
Specific Gravity	D-792	1.15

Install one valve box for each type of valve installed as per details. No valve box extensions will be accepted. Gravel sump shall be installed after compaction of all trenches. Final portion of gravel shall be placed inside valve box after valve box is backfilled and compacted. Controller letter and station number are to be branded on the lid of each valve box. Letter and number size to be no smaller than one inch and no greater in size than 1-1/2 inch, depth of branding to be no more than 1/8 inch and no less than 1/16 inch into valve box lid. Splice boxes shall be labeled with the words "low voltage electrical splice" in the same manner.

SUBSECTION 757.3.8 - IS MODIFIED TO ADD:

Vent (air) Valve/Vacuum Breaker shall be for use on an irrigation piping system that will allow air to purge up to 125 psi during the fill process and allow air to enter during drain-down. The valve shall be installed in accordance with manufacturer's written instructions in a 10-inch diameter valve box with boltable cover. A 1/2-inch air vent shall be installed on the high point of each lateral line serving drip irrigation systems.

Valve materials - Thermoplastic body, glass filled Polysuflone

Temperature - Max. operating temperature:
 200 degrees F. under pressure
 250 degrees F. underpressurized

Pressures - Max. operating pressure 100 psi
 proof pressure 150 psi, minimum

SUBSECTION 757.3.9 - IRRIGATION FILTER-LATERAL LINE: IS MODIFIED TO ADD:

Irrigation Filter (lateral line) shall be a WYE type with a 150/mesh screen or smaller. The filter shall be constructed of brass, threaded at both ends and come with a "ball" type flush valve connection.

SUBSECTION 757.3.10 - PRESSURE REGULATOR: IS ADDED:

Pressure Regulator "A" shall be constructed of brass with double unions (or as shown on the drawings). The pressure regulator shall have integral pressure adjustments and an integral pressure gauge reading to 60 psi. The pressure regulator shall be installed according to the manufacturer's requirements and as shown on the drawings. Size as per plan.

SUBSECTION 757.4 - BACKFLOW PREVENTION ASSEMBLY: IS MODIFIED TO ADD:

General. Backflow prevention units of the types indicated shall be installed at the locations shown on the drawings. Where union connections are not provided as part of the unit, the Contractor shall provide and install a union or sleeve type coupling between the control valve and the inlet side of the unit. Pipe and fittings for backflow prevention units shall be bronze.

Reduced Pressure Backflow Prevention Unit. The reduced pressure backflow prevention unit shall be a factory assembled unit consisting of two independently acting spring-loaded check valves with a differential pressure relief valve controlled-reduced-pressure zone in between and shall be complete with test cocks and drain. The first check valve shall reduce the supply pressure a predetermined amount so that during normal flow and the cessation of normal flow the pressure between the checks is less than the supply pressure. The pressure differential relief valve shall automatically discharge to atmosphere to maintain the pressure in the reduced pressure zone below the supply pressure. All parts shall be removable or replaceable without removal of the unit from the line. The unit shall be suitable for a working pressure of 125 pounds per square inch and shall be the product of a manufacturer regularly engaged in the production of backflow prevention units of the reduced pressure type.

SUBSECTION 757.4 - ELECTRIC REMOTE CONTROL VALVES: IS REVISED TO READ:

The remote control valves shall be an electrical actuated valve constructed of corrosion-resistant materials. The valve shall have an internal manual operation which allows the opening and closing of the valve without electrical power, or external bleed of water. The valve shall have a self-cleaning screen and a removable housing cover for easy inline maintenance.

Materials:	body	- glass reinforced nylon.
	diaphragm	- reinforced nylon with O-ring and stainless steel pressure plate.
Performance:	1"	valve - min. 2 gpm max. 50 gpm
(FLOWRATES)	1-1/2"	valve - min. 10 gpm max. 110 gpm
	2"	valve - min. 25 gpm max. 200 gpm

The solenoid actuator shall be 24 volt A.C. 2-way type. Inrush and holding current shall be no more than 300 mA and 200 mA respectively. The solenoid shall require approximately 1/3 the inrush current as standard 24 volt A.C. solenoids.

Materials:	Plunger and core	- stainless steel.
	Housing	- glass reinforced nylon, epoxy potted.
	Spring	- stainless steel.

Performance:	min. operating voltage at 150 psi shall be 20 volts.
	Inrush Current (amps) .104
	Holding Current (amps) .104

SUBSECTION 757.4 - IS MODIFIED TO ADD:

Fertilizer Injector shall be a feeder, water operated, positive displacement proportioning chemical metering pump. The pump shall come with plastic tubing, foot valve strainer, suction valve and discharge valve. The pump minimum operating pressure shall be 15 psi and the maximum operating pressure shall be 125 psi. The fertilizer injector's adjustable feed shall vary from 0 to 1.3 oz. per gallon of water and the ratio of the feed can be changed while the pump is operating. The fertilizer injector shall have the following options:

Diaphragm - Hypalon
Head - PVC
Valve - Double
Single Head Fittings - Universal Injector

The Contractor shall install the fertilizer injector according to the manufacturers requirements and as shown on the drawings.

SUBSECTION 757.4 - IS MODIFIED TO ADD:

Irrigation Filter (main line) shall be a centrifugal action filter which forces incoming water through a directional nozzle plate onto the inside of the filter screen. Debris is forced down in rotating motion into a holding basin at the bottom of the filter and by opening a flush valve, the particles may be removed. The Contractor shall install the irrigation filter according to the manufacturer's requirements and as shown on the drawings.

Filter Housing shall be constructed of ten gauge steel, epoxy coated, and welded into a wye configuration. A threaded 1/4 inch pressure tap shall be welded into the upstream and downstream piping for connection of pressure gauges.

Filter Screen shall be 150/mesh stainless steel.

Filter Flush Valve shall be a "ball" type made of brass.

SUBSECTION 757.4 - IS MODIFIED TO ADD:

Digital Flow Monitor shall be a microprocessor based flow monitor with LCD which will display the flow rate and total flow rate at the push of a button. The flow monitor shall be capable of being calibrated in the field with the use of a front mounted keyboard.

SUBSECTION 757.4 - IS MODIFIED TO ADD:

Flow Sensor (meter) shall be a 6-bladed design with a proprietary, non-magnetic sensing mechanism. The sensor shall be supplied with a two conductor, shielded cable extending out through a conduit connection on top of the sensor. The sensor shall be mounted in a threaded brass pipe tee. The flow sensor shall have a maximum pressure range of 400 psi and a flow range of .2-20 feet/second. The Contractor shall install the flow sensor according to the manufacturers

requirements and as shown on the project drawings.

SUBSECTION 757.4 - IS MODIFIED TO ADD:

Pressure Sensor (switch) shall be operated by a brass Bourdon tube actuating a mercury switch and enclosed in a weather-resistant housing. Switch shall have deadband adjustable operating range from 5-150 psig. Switch shall have calibrated dial and two pointers indicating set and reset points. Switch shall have visible on/off indication. Set points shall be adjustable without removing switch cover or shutting down process. The pressure sensor shall be enclosed in a NEMA type enclosure, and shall be lockable, size as required. The Contractor shall install the pressure sensor according to the manufacturer's requirements and as shown on the project drawings.

SUBSECTION 757.5 - IS MODIFIED TO ADD:

Emitters (Drip Line). Emitters shall be independent pressure compensating plastic in-line emitters, (Drip Line) capable of providing a consistent discharge rate of one or one half gallon per hour (gph) at 3 to 60 pounds per square inch (psi) located as shown on the plans. The emitter shall be constructed of heat resistant plastic and have an operating range of 3 to 60 pounds per square inch. Emitters shall be spaced as shown on plans. Tree emitter assembly, shall have eight (8) 1-GPH in-line emitters. Shrub emitter assembly shall have two (2) 0.5 GPH in-line emitters. In-line emitters shall be spaced 24". Install in-line emitters 4-6" below finished grade.

SUBSECTION 757.6.4 - ELECTRONIC CONTROLLER UNIT: IS REVISED TO READ:

Automatic Irrigation Controller shall be a computer-controlled field satellite system capable of radio communication with a remote (off site) central computer. The irrigation controller shall be multi-wired, stand-alone microprocessor base capable of performing up to eight independent irrigation functions simultaneously. The controller shall be connected by communication cable to the transmitter/receiver unit as shown on the drawings. The minimum station capacity shall be as indicated on the drawings. The irrigation controller shall be mounted in a metal enclosure as specified, detailed and shown on the drawings.

SECTION 772 - CHAIN LINK:

SECTION 772.2 - POSTS, RAILS AND BRACES:

"Line posts shall be 1.9 inches in outside diameter (O.D.) high strength steel pipe (HSSP) (MAG 772.2, Type C) and weigh 2.28 pounds per linear foot. Terminal posts shall be 2.375 inches in outside diameter (O.D.) HSSP and weigh 3.12 pounds per linear foot, galvanized inside and out. All framework material shall be PVC coated, min. 10 mil thickness, tan or brown in color, by the fluidized bed thermal fusion method over the galvanized, cleaned, primed, and, pre-heated substrate. The top rail and braces shall be 1.66 inches in outside diameter, weigh 1.82 pounds per linear foot galvanized with a minimum of .9 ounces of zinc per square foot on each side and PVC coated as stated above."

SUBSECTION 772.3 - CHAINLINK FABRIC:

"The fence fabric shall be 66 inches high, No. 11 or heavier gauge galvanized steel core woven in a two (2) inch diamond mesh, PVC coated, tan or brown in color, by fluidized bed method with a thermal fused and bond between PVC and the galvanized wire. PVC shall be 7 mils thick (min.) and zinc galvanizing shall be a min. of .3 ounces per square foot. Top selvage to have a knuckled finish, the bottom selvage to have a knuckled finish. PVC color shall match sample as provided by the District prior to installation."

SUBSECTION 772.4 - TENSION WIRES AND FABRIC TIES: IS REVISED TO READ:

Delete first paragraph in its entirety and replace with the following:

"A bottom tension wire shall be used, consisting of a 9 gauge galvanized wire. Tension wire shall be PVC coated a minimum 7 mils in thickness to match the fabric. Tension wire color shall match sample as provided by the District prior to application."

SUBSECTION 772.6 - FITTINGS: IS MODIFIED TO ADD:

All fittings shall be hot dipped galvanized and of malleable, cast iron, or pressed steel. The fabric shall be fastened to the line posts with No. 11.5 gauge galvanized tie wires spaced approximately 24 inches apart. All fittings shall be PVC coated a minimum of 7 mils thick to match the fabric. Bolts, nuts, hinge pins, and other components not suitable for PVC coating shall be color coated to match the fabric. Color coating shall match sample as provided by the District prior to application.

SECTION 791 - CHEMICAL STAIN: IS MODIFIED TO ADD:

All soil cement designated as stained on project plans shall be stained with a simulated desert varnish, Eonite or equal.

The Contractor shall prepare a sample area of approximately 10 square feet of stained soil cement for the Engineer's approval. The sample area may be part of the area requiring stain and this sample area once approved, will be used by the Engineer to determine the acceptability of the remaining work under this item measurement and payment shall be in accordance with Section 109.

Existing concrete patches shall be treated with the simulated desert varnish, Eonite' or equal. Application shall be in accordance with manufacturer's recommendations, Rogonco, Inc., Tempe, Arizona, phone (602) 820-5688.

The unit price established on the Bidding Schedule shall be full compensation for furnishing all labor, materials, tools, and equipment for performing all work necessary to complete the staining operation.

SECTION 795 - LANDSCAPE MATERIAL:

SUBSECTION 795.8.4 - DECOMPOSED GRANITE: IS REVISED TO READ:

Decomposed granite cover shall be 1/2 inch minus, "Gold" in color. Decomposed granite underpass access road shall be 3/4 inch minus, 3" thick, and "Yavapai Coral" in color. Decomposed granite shall be rolled and compacted. The contractor is to provide a 10 square foot sample in place, submitted to the FCD Engineer for approval prior to use.

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