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SPECIAL PROVISIONS
FOR
NORTHERN AVENUE SANITARY SEWER SIPHON AT THE
ARIZONA CANAL DIVERSION CHANNEL

CONTRACT NO. FCD 87-23



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

A118.529

SPECIAL PROVISIONS
FOR

NORTHERN AVENUE SANITARY SEWER SIPHON AT THE
ARIZONA CANAL DIVERSION CHANNEL

CONTRACT NO. FCD 87-28



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

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 87-28

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INVITATION FOR BIDS
(Construction Contract)

Project: Northern Avenue Sanitary
Sewer Siphon at the ACDC

Ref. Invitation FCD 87-28
Date: August 24, 1987
Issued by: Flood Control District
of Maricopa County

Vicinity: Northern Avenue at the
Arizona Canal, Phoenix, Arizona

SEALED BIDS, IN SINGLE COPY FOR THE WORK DESCRIBED HEREIN WILL BE RECEIVED UNTIL 2:00 PM, LOCAL TIME AT THE PLACE OF THE BID OPENING SEPTEMBER 17, 1987, IN THE OFFICE OF THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, 3335 WEST DURANGO STREET, PHOENIX, ARIZONA, 85009, AND AT THAT TIME PUBLICLY OPENED.

A PRE-BID CONFERENCE WILL BE HELD ON SEPTEMBER 8, 1987, AT 10:00 A.M. IN THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY CONFERENCE ROOM, 3335 WEST DURANGO STREET. IT IS IN THE BEST INTEREST OF PROSPECTIVE BIDDERS TO ATTEND THE PRE-BID CONFERENCE.

BID SECURITY IN AN AMOUNT OF NOT LESS THAN FIVE PERCENT (5%) OF THE TOTAL BID PRICE MUST BE SUBMITTED WITH EACH BID. THE BID SECURITY MAY BE IN THE FORM OF A BID BOND, CASHIER'S CHECK, POSTAL MONEY ORDER, OR CASH. THE BID SECURITY WILL BE MADE PAYABLE TO THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY AS A GUARANTEE THAT IF THE WORK IS AWARDED TO THE BIDDER, HE WILL WITHIN TEN (10) DAYS FROM THE DATE OF SUCH AWARD, ENTER INTO PROPER CONTRACT AND BOND CONDITIONS FOR THE FAITHFUL PERFORMANCE OF THE WORK. OTHERWISE, SAID AMOUNT WILL BE FORFEITED TO THE FLOOD CONTROL DISTRICT. BID SECURITY WILL BE RETURNED AS PRESCRIBED BY MAG 103.

THE SUCCESSFUL BIDDER SHALL BE REQUIRED TO FURNISH PERFORMANCE AND PAYMENT BONDS IN PENAL SUMS NOT LESS THAN ONE HUNDRED PERCENT (100%) RESPECTIVELY, OF THE ORIGINAL AMOUNT OF THE CONTRACT.

DESCRIPTION OF WORK: Construction of a sanitary sewer siphon beneath the Arizona Canal and the location for the future construction of the Arizona Canal Diversion Channel and other miscellaneous related work.

INVITATION FOR BIDS
NO. FCD 87-28

THE WORK SHALL COMMENCE WITHIN SEVEN (7) CALENDAR DAYS AFTER RECEIPT OF THE NOTICE TO PROCEED, AND BE COMPLETED BY JANUARY 15, 1988.

NOTICE: THE BID SCHEDULE, SPECIAL PROVISIONS, INSTRUCTIONS TO BIDDERS, UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, EDITION OF 1979 (MAG) AND DRAWINGS LISTED UNDER THE CONTENTS WILL BE INCORPORATED IN AND BECOME A PART OF THE RESULTANT CONTRACT.

CHERIE PENNINGTON, CLERK
BOARD OF DIRECTORS
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

INVITATION FOR BIDS
NO. FCD 87-28

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION FOR BIDS, FCD 87-28
INSTRUCTIONS TO BIDDERS

1. Explanation to Bidders. Any explanations desired by the bidder, questions, or items for clarification regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc., may be addressed to the Chief Engineer and General Manager, preferably in writing, prior to the pre-bid conference. Any answers, interpretations, or clarifications affecting the cost will be addressed to all bidders in an addendum to the invitation. The receipt of an addendum by the bidder must be acknowledged in the space provided on the bid form or by letter or telegram received before the time set for the bid opening. Oral explanations or instructions given before the award of the contract will not be binding.
2. Conditions Affecting the Work. It is in the best interest of the bidders to attend the pre-bid conference. Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and the location of the work, the general and local conditions which can affect the work and the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work. [See MAG 102.4].
3. Bidder's Qualifications. Before a bid is considered for award, a bidder may be requested by the Chief Engineer and General Manager of the Flood Control District to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.
4. Bid Guarantee. Where a bid guarantee is required by the invitation for bids, failure to furnish a bid guarantee in the proper form and amount by the time set for opening of bids, may be cause for rejection of the bid.

If the successful bidder, upon acceptance of his bid by the Flood Control District within the period specified herein for acceptance (sixty days if no period is specified) fails to execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the bid as accepted within the time specified (ten days if no period is specified) after receipt of the forms by him, his contract may be terminated for default. In such event the bid guarantee shall be retained as liquidated damages.

INVITATION FOR BIDS
NO. FCD 87-28

5. Preparation of Bids. Bids shall be submitted on the forms furnished, or copies thereof, and must be manually signed. If erasures or other changes appear on the forms, each erasure or change must be initialed by the person signing the bid. Unless specifically authorized in the invitation for bids, telegraphic bids will not be considered.

No bid will be considered unless all items in the bid schedule are priced. In case of an error in the extension of price, the unit price shall govern. The quantities listed on the bid schedule on which unit prices are requested are estimates only.

Unless called for, alternate bids will not be considered.

Modifications of bids already submitted will be considered if received at the office designated in the invitation for bids by the time set for opening bids.

6. Submission of Bids. Bids must be sealed, addressed to the Chief Engineer and General Manager, Flood Control District of Maricopa County, 3335 West Durango, Phoenix, Arizona 85009, and marked to identify the bid to the referenced Contract FCD Number. Failure to appropriately identify the bid may result in a premature opening of, or a failure to open, such bid. The name of the bidder shall be on the outside of the envelope. (See MAG 102.9)
7. Withdrawal of Bids or Modifications. Bids may be withdrawn by written request received from the bidder prior to the time set for opening of bids.
8. Public Opening of Bids. Bids will be publicly opened at the time and place set for the opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.
9. Award of Contract. Award and execution of a contract shall be in accordance with MAG Section 103.
10. Specifications. Specifications referred to herein shall include all revisions and amendments in effect on the date of issuance of the invitation for bids. These instructions, Special Instructions to Bidders, and the herein contained Construction Special Provisions supplement the Uniform Standard Specifications herein referred to by "MAG" section number or paragraph number; however, in case of conflict, these instructions and Special Provisions supersede the Uniform Standard Specifications (MAG).

INVITATION FOR BIDS
NO. FCD 87-28

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION FOR BIDS, FCD 87-28
SPECIAL INSTRUCTIONS TO BIDDER

Contract Plans, Special Provisions and Contract Documents: Plans, Special Provisions, and forms for proposal, Bidding Schedule, Contract Agreement and Performance Bond may be obtained from the Flood Control District of Maricopa County, 3335 West Durango Street, Phoenix, Arizona, upon payment of \$10.00 by check payable to the FLOOD CONTROL DISTRICT OF MARICOPA COUNTY. This payment will not be refunded.

APPROXIMATE QUANTITIES FOR PRINCIPAL ITEMS

<u>QUANTITY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
810	L.F.	8" D.T.P. Sewerline (Install only)
230	L.F.	6" PVC Sewer Air Line
1	L.S.	Siphon Inlet Structure
1	L.S.	Siphon Outlet Structure

and such other pertinent items as are necessary for the completion of the project as shown on the plans or as called for in the Special Provisions or in the Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction.

Location of Work: The proposed work is located at Northern Avenue and the Arizona Canal, Phoenix, Arizona.

CHERIE PENNINGTON, CLERK
BOARD OF DIRECTORS
FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY

INVITATION FOR BIDS
CONTRACT NO. FCD 87-28

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
(Construction Contract)

BID FORM

Project: Northern Avenue Sanitary Sewer
Siphon at the ACDC

Invitation FCD 87-28
Date: August 24, 1987

Location: Northern Ave. at the Arizona
Canal, Phoenix, Arizona

To: Chief Engineer and General Manager
Flood Control District of Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

The following Proposal is made on behalf of _____
_____ and no others. The Total Contract amount of
this proposal is (in words) _____
_____ and _____/100 dollars, (in figures)

_____, this amount being the sum total of the extended
amount for each pay item on the Bidding Schedule.

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 Flood Control District 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, Uniform Standard Specifications for Public Works Construction, 1979 Edition (MAG) and revisions and supplements thereto, together with the Special Provisions, forms of Contract and Bond authorized by the Board of Directors and constituting essential parts of this Proposal, have been carefully examined, and also that the site of the work has been personally inspected.

The Undersigned declares that the amount and nature of the work to be done is understood and that at no time will misunderstanding of the Plans, Specifications, Special Provisions, or conditions to be overcome, be pled. On the basis of the Plans, Specifications, Special Provisions, the forms of Contract, and the Bond proposed for use, the Undersigned proposes to furnish

all the necessary machinery, equipment, tools, apparatus, and other means of construction, to do all the work and to furnish all the materials in the manner specified and to finish the entire project within the time hereinafter proposed and to accept, as full compensation therefor, the sum of various products obtained by multiplying each unit price, herein bid for work or materials, by the quantity thereof actually incorporated in the completed project, as determined by the Chief Engineer and General Manager, Flood Control District of Maricopa County.

The Undersigned understands that the quantities mentioned herein are approximate 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.

BIDDING SCHEDULE

Project : Northern Avenue Sanitary Sewer Siphon
 For
 Arizona Canal Diversion Channel
 Phoenix, Arizona

Contract : FCD 87-28

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (In Words)	UNIT PRICE	EXTENSION
336-1	Pavement Cut & Replacement	24	Sq.Yd.		\$	\$
336-2	Canal Lining Replacement (SRP STDS.)	1	L.Sum			
340-1	Remove & Replace Conc. Sidewalk (C.O.P 1230)	30	Sq.Ft.			
350-1	Removal Of Existing Improvements	1	L.Sum			
615-1	Sewer Pipe (12")	40	L.Ft.			
625-1	Inlet Siphon Structure	1	Each			
625-2	Outlet Siphon Structure	1	Each		\$	\$

Contract : FCD 87-28

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (In Words)	UNIT PRICE	EXTENSION
625-3	Manhole (MAG Det. 426, Type A)	1	Each		\$	\$
625-4	Manhole (MAG DET. 420)	1	Each			
745-1	Pipe (PVC)(6")(Schedule 40)	233	L.Ft.			
750-1	Pipe , Ductile Iron (8") (Pipe Installation)	810	L.Ft.			

TOTAL \$ _____

The bidder hereby acknowledges receipt of and agrees his proposal is based on the following addenda number(s).

The Undersigned further proposes to execute the Contract Agreement and furnish satisfactory Bonds within ten (10) days from the date of award, time being of the essence. The undersigned further proposes to begin the work as specified in the Contract attached hereto, and to complete the work within the time limits as specified in the Special Provisions and maintain at all times a Contract Bond, approved by the Board of Directors, in an amount equal to one hundred percent (100%) of the total bid. This bond shall serve not only to guarantee the completion of the work on the part of the Undersigned, but also to guarantee the excellence of both workmanship and material and the payment of all obligations incurred, said Bond to be in full force and effect until the work is finally accepted and the provisions of the Plans, Specifications and Special Provisions are fulfilled.

A Proposal guaranty in the amount and character named in the Invitation for Bids is enclosed amounting to not less than five percent (5%) of the total bid, which Proposal guaranty is submitted as a guaranty of the good faith of the Bidder and that 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 this Proposal, or if the Proposal is accepted and there should be failure on the part of the Undersigned to execute the Contract and furnish satisfactory Bond as herein provided, the Flood Control District of Maricopa County in either of such events, shall be entitled and is hereby given the right to retain the said Proposal guaranty as liquidated damages.

Date: _____, 19__.

IF BY AN INDIVIDUAL: License No. _____ Classification _____

(Name) (Address)

IF BY A FIRM OR PARTNERSHIP: License No. _____ Classification _____

(Firm Name) (Firm Address)

By: _____

*Name and Address of Each Member:

Date _____, 19__.

IF BY A CORPORATION: License No. _____ Classification _____

[Corporate Name]

[Corporation Address]

By: _____

**Incorporated under the Laws of _____

Names and Addresses of Officers:

[President]

[Address]

[Secretary]

[Address]

[Treasurer]

[Address]

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

**The name of the State under which the Corporation was chartered and names, title, and business address of the President, Secretary, and Treasurer must be shown.

PROPOSAL
CONTRACT NO. FCD 87-28

SURETY BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, (hereinafter called the Principal), and the _____, a corporation duly organized under the laws of the State of _____, as Surety, (hereinafter called the Surety), are held and firmly bound unto the Flood Control District of Maricopa County as Obligee, in the sum of ___ percent (___ %) of the total amount of the bid of Principal, submitted by him to the Flood Control District of Maricopa County, for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents, and in conformance with A.R.S.

WHEREAS, the said Principal is herewith submitting its proposal for _____

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., 19__.

Principal

Title

Witness:

Surety

Title

Witness:

CONSTRUCTION SPECIAL PROVISIONS
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT NO. 87-28
for
NORTHERN AVENUE SANITARY SEWER SIPHON
at the
ARIZONA CANAL DIVERSION CHANNEL

PROPOSED WORK: The work includes the construction of a two barrel sanitary sewer siphon with special inlet and outlet structures, inlet, outlet, and connector pipes, and miscellaneous related items required for completion of the project.

LOCATION OF THE WORK: This project is located in Phoenix, Arizona, on Northern Avenue at the Arizona Canal Diversion Channel, between 7th Street and 12th Street.

SPECIFICATIONS: Except as otherwise required in these specifications, construction of this project shall be in accordance with all applicable Maricopa Association of Governments (MAG) Uniform Standard Specifications and Uniform Standard Details, latest revision, and the latest revision of the City of Phoenix Supplements to the MAG Uniform Standard Specifications and Details, together with Maricopa County Highway Department Supplements to the Uniform Standard Specifications.

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

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

CONTRACT TIME: The Contractor shall start work within seven (7) calendar days after the date of Notice to Proceed and complete all work on the project no later than January 15, 1988.

The Contractor shall complete all work from station 19+50 to station 20+50 during a dry-up period of the Arizona Canal from November 13 to December 12, 1987.

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

WATER, LIGHT, POWER, HEAT, TELEPHONE: All water for construction purposes, drinking water, lighting, temporary electric power, heat and telephone service shall be arranged for and provided for the requirements of the work by the Contractor at his expense.

PROGRESS SCHEDULE: The Contractor shall submit his proposed work progress schedule to the Chief Engineer and General Manager for approval before starting the work.

MATERIAL SOURCES: The owner shall provide the 8 inch MJDIP materials for the 2 barrel siphon. Approximately 810 L.Ft. of 8-inch MJDIP, 3-8" solid sleeves and 6-8"x22 1/2° bends all with internal lining of coal tar epoxy will be available from a construction site at 25th Avenue and the Arizona Canal after November 9, 1987. The Contractor must make arrangements to move all these materials to the job site. Concrete, Asphalt, Aggregate Base, Pipe, etc. 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 certificates stating that the material produced from commercial sources is in accordance with the Uniform Standard Specifications and these Special Provisions.

Any of the unused MJDIP material shall be delivered by the Contractor to the county yard located at Glendale Avenue 1½ miles east of Glendale Airport.

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

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

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

Change the definition of Owner to read as follows: The City of Phoenix, acting through its legally constituted officials, officers, or employees.

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

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

SECTION 102.5 - PREPARATION OF PROPOSAL: The bidder's Arizona State Contractor's License number and classifications shall be shown on the proposal.

SECTION 103.6 - CONTRACTOR'S INSURANCE: Concurrently with the execution of the contract, the Contractor shall furnish a Certificate of Insurance. The types of insurance and the limits of liability shall be as indicated thereon, i.e.

\$1,000,000	bodily injury per person
\$5,000,000	bodily injury each occurrence
\$1,000,000	property damage

The Flood Control District of Maricopa County shall be named as coinsured, and a certificate of insurance should be filed with the Flood Control District of Maricopa County.

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

The Contractor shall furnish the Engineer with six (6) copies of shop drawings, pipe layout diagrams, manufacturer's catalog data, and detailed information, in sufficient detail to show complete compliance with all specified requirements, covering, but not limited to, the following items:

- A. Pre-Cast Manhole Risers
- B. Reinforcing Steel
- C. Castings

- D. Field Closures
- E. Concrete Mix Designs
- F. PVC Structure Lining
- G. Caulking Materials
- H. Coating Materials
- I. Grating Design Calculations and Details
- J. All Special Fabricated Fiberglass Items
- K. Access Covers and Appurtenances
- L. Detailed Sequence of Construction for Structures

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

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

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

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

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

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

SECTION 104 - SCOPE OF WORK:

104.2.1 General: The cost of all work required under this contract, as shown on the plans, for which there are no specific

items shown on the Bidding Schedule, shall be included in the prices bid for related items.

SECTION 105.6 - COOPERATION WITH UTILITIES: An attempt has been made to determine the locations of all underground utilities and drainage pipes, culverts, and structures. The Contractor shall comply with the requirements of the ARS 40-360.21 through 40-360.29 in notification to the interested utility owners prior to the start of construction and shall ascertain the approximate locations of the various underground utilities shown on the plans and as may be brought to his attention. The exact locations of these underground utilities shall be determined by excavations made by the Contractor prior to any trenching operations. It shall be the Contractor's responsibility to cooperate with the pertinent utility companies, so that any obstructing utility installation may be adjusted. Should the Contractor's operations result in damage to any utility, the location of which has been brought to his attention, he shall assume full responsibility for such damage.

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

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

Mountain Bell Telephone Company.....	Ron Catlett.....	842-7750
Salt River Project (Overhead Power).....	236-8888 or 273-2202	
Salt River Valley Water Users Association....	Slavko Jovanovic....	236-5072
Arizona Public Service.....	Lois Winkler	371-6837
Location Staking (APS, Mountain Bell, SRP).....		263-1100
City of Phoenix (Water).....	Steve Schebler.....	268-4709
	(Sewer).....	Bob Rentfro.....268-1864
Maricopa County Highway Department.....		262-3631
Flood Control District of Maricopa County.....		262-1501

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

The Flood Control District of Maricopa County reserves the right to adjust design grades or the locations of the siphon structures prior to construction if, in the opinion of the Engineer, it should become necessary, without additional cost to the Flood Control District of Maricopa County.

Survey work shall be performed by a qualified and experienced surveyor under the supervision of a licensed land surveyor.

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

SECTION 106 - CONTROL OF MATERIALS:

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

SECTION 107.2 - PERMITS: The Contractor shall be responsible for obtaining all permits and licenses, paying all charges, fees, taxes, and giving all notices necessary and incidental to the due and lawful execution of the work. Permits for earth moving may be obtained from the Bureau of Air Pollution Control, Maricopa County Department of Health Services, 1845 East Roosevelt, telephone number 258-6381. The Contractor shall obtain a "no fee" permit from the City of Phoenix for construction within the City's right-of-way. The Contractor shall also obtain a permit from S.R.P. for construction within their right-of-way.

SECTION 108.5 - LIMITATION OF OPERATIONS: Should the Contractor elect to perform any work before or after regular working hours, on weekends, or legal holidays, any charges incurred by the District for inspection of the work, surveys, or tests of materials will be deducted from monies due or to become due to the Contractor. This requirement will not be enforced during the Arizona Canal dry up from November 13, 1987 to December 12, 1987.

SECTION 108.7 - DETERMINATION AND EXTENSION OF CONTRACT TIME and SECTION 108.9 - FAILURE TO COMPLETE ON TIME: Sections 108.7 and 108.9 of the MAG Standard Specifications are amended to include the following:

SEQUENCE OF CONSTRUCTION

General: The right to direct the sequence of the work under this contract is a function vested solely in the Engineer.

Prior to commencement of the work, the Contractor shall prepare and submit to the Engineer for approval, a written schedule covering the general sequence of the whole work to be performed. The schedule shall be submitted to the Engineer at the Pre-Construction Conference.

The work schedule, when approved, shall not be subject to change without the written consent of the Engineer. Orderly progress of all work to be performed under this contract shall be the full responsibility of the Contractor. The work schedule must conform to the contract time requirements.

Special Requirements on Segments: The Contractor shall complete all work within SRP's Arizona Canal Right Of Way (Station 19+10 to Station 20+50) during a dry-up period of the Arizona Canal from November 13 to December 12, 1987.

Failure to Complete on Time: Time is of the essence in completing the portion of the project affecting the Arizona Canal. Therefore, in Section 108.7, Determination and Extension of Contract Time, and Section 108.9. Failure to complete on time, MAG Table 108 is deleted, and the following paragraphs are substituted:

Station 19+50 to Station 20+50

To assure completion of the work between Stations 19+50 and 20+50 within the scheduled time, a daily review of the construction schedule for this work will be made by the Contractor and the Construction Manager. Should it appear to the Engineer that the remaining time in the schedule will be insufficient to successfully complete the work as required, the Engineer will direct in writing measures to be taken by the Contractor, at no expense to the Flood Control District, to assure that the work will be completed on time. Payment for this work will be withheld until final inspection and acceptance of this work. Failure to completely install the pipe, including mechanical compaction of the trench and the lining of the canal, in accordance with the plan details, prior to the end of the dry-up period will result in termination of the contract by the Flood Control District and forfeiture of the performance bond by the Contractor. Any further backfilling, compaction, or lining of the Arizona Canal not completed by the Contractor within five days of the end of the dry-up period will be performed by construction forces of the Salt River Valley Water Users' Association. The cost of this work will be negotiated by

the Flood Control District with the Salt River Valley Water User's Association and paid for with monies withheld from the Contractor. Any further work required to complete the installation as shown on the drawings, will be paid for with monies withheld from the Contractor.

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

The Contractor shall note that sheet 6 of the plans calls for the removal of 3 trees. The Contractor will be required to work around all other trees, and protect them from damage during the course of his work. If the Contractor wishes to remove additional trees to facilitate construction, he shall obtain permission from the property owner.

No separate payment will be made for clearing and grubbing, and the costs thereof shall be included in the price bid for related items of work.

SECTION 206 - STRUCTURE EXCAVATION AND BACKFILL: Structure excavation and backfill shall conform to Section 206 of the MAG Standard Specifications except that no direct payment will be made for this item. The cost of this item shall be included in the contract price bid for related items.

SECTION 225 - WATERING: The work under this item shall be in accordance with Section 225 of the MAG Standard Specifications.

SECTION 336-1. PAVEMENT MATCHING AND SURFACING REPLACEMENT: The work under this item shall conform in their entirety to Section 336 of the MAG Standard Specifications. This item shall be paid for at the contract unit price per square yards complete in place.

SECTION 336-2. CANAL LINING REPLACEMENT: This item shall include all requirements of the Salt River Valley Water Users' Association's License Agreement for which no other pay item is designated. Canal Lining Replacement shall be constructed in accordance with the Salt River Valley Water Users' Association sketch in the License Agreement, which will become part of these contract documents, and shall otherwise conform to Section 336 of the MAG Standard Specifications. This item shall be paid for at the contract lump sum price.

SECTION 350 - REMOVAL OF EXISTING IMPROVEMENTS: The work under this item and in addition to the items listed in the MAG Standard Specifications, shall include the following:

- A. Lawn Restoration: Where new sidewalk or bike paths are constructed adjacent to grass-covered yards, the Contractor, after sidewalk construction is complete, shall grade the area behind the sidewalk and reseed with grass identical to the existing grass. Where existing grass cannot be seeded, it shall be restored with sod of the same type grass, in a method approved by the Engineer.
- B. Restoration of Temporary Construction Easements: The Contractor shall leave the easements in as good condition, or better, after work is completed. Special care must be taken to replace any asphalt, trees, sprinklers, lights, walls, fences, etc., which were disturbed as a result of construction. Where grass is located within the easement, such as a lawn, the Contractor shall remove the sod which would be in the path of any construction, store it, keep it moist, and replace it immediately after construction is complete.
- C. Any and all items not specifically set forth as a separate pay item.
- D. Sawcutting and matching existing pavements and curbs, gutters, etc.
- E. Relocating positions of existing signs to be staked by the Inspector.
- F. Relocating positions of existing plants within the right-of-way to be staked by the Inspector.

SECTION 601 - TRENCH EXCAVATION, BACKFILLING, AND COMPACTION:

- A. CITY OF PHOENIX SUPPLEMENT SUBSECTION 601.2.1 GENERAL: is amended to add the following paragraph:

"No extra compensation or additional time will be authorized for claims that soil conditions differ from those anticipated or those indicated by soils logs and/or reports. It is the Contractor's responsibility to make his own determination as to actual existing conditions."

- B. SECTION 601.2.2 TRENCH WIDTH: is amended to add the following paragraph:

"If the Contractor elects to slope the trench walls in lieu of shoring, sheeting or other wall support measures, he shall be responsible for any and all problems encountered and costs incurred as a result of the

increased trench width. Furthermore, no increases in contract time will be allowed as a result of sloping trench walls."

- C. SECTION 601.2.5 OVER EXCAVATION: is amended to add the following paragraph:

"When the Engineer determines that over excavation and backfilling, below the normal foundation and bedding depth, are required as a result of unsuitable material, it will be considered extra work. Payment and construction time extension will be negotiated with the Contractor or as otherwise provided for in these contract documents. As a condition of the Contractor receiving payment, agreement on method of payment and construction time extension shall be reached prior to start of work unless otherwise authorized in writing by the Engineer."

- D. SECTION 601.2.8 GRADING AND STOCKPILING: Add the following paragraph:

"Excavated material shall not be considered as unsuitable due to an excessive moisture content or an inadequate moisture content for proper compaction. The Contractor shall take whatever measures are required, at his own expense, to add or remove moisture from material to be used as backfill in order that proper compaction can be obtained within the limits set in Section 601.4.

The Contractor may elect, at no cost to the Contracting Agency, to haul off and dispose of excessively wet or dry material and replace it with material conforming to the specifications for backfill.

In either event, the proper compaction shall be obtained.

There will be no additional payment or time extension for this work."

- E. SECTION 601.4.3 BACKFILL: Delete the fourth paragraph from MAG Standard Specification in its entirety, and substitute the following:

"When mechanical compaction is to be used, the Contractor will provide a test section demonstrating his proposed method and equipment to be used. Upon agreement with the Engineer as to the acceptability of the

Contractor's proposed method and equipment, they shall not be changed without the prior approval of the Engineer. Mechanical compacted lifts in excess of one foot will not be allowed without the express written consent of the Engineer."

- F. SECTION 601.4.3 BACKFILL: is amended to MAG Standard Specification to add the following paragraphs:

"Backfill material shall be within the range of +2% to -4% of the optimum moisture content, prior to placing the material in the trench. The moisture content shall be uniform throughout the backfill material. Material not meeting these requirements may be required to be removed from the trench and moisture added or correct the deficiencies prior to replacement, all at no increase in cost to the contract.

It shall be the Contractor's responsibility to blend excavated material, removing or adding moisture as may be necessary to meet the requirements of the specifications, all at no increase in cost to the contract.

Excavated material when used for backfill shall meet the requirements of the preceding paragraph.

The moisture content requirements contained herein are waived when granular material is used and water settled.

The Engineer may require all or any part of the trench to be load tested for stability with Contractor's equipment prior to placement of asphalt or Portland cement concrete pavement. Unstable areas as determined by the Engineer shall be corrected by the Contractor at no increase in cost to the contract."

SECTION 601.4.4 - COMPACTION DENSITIES: Modify MAG table 601-2 to include the following: From Station 18+87 to Station 22+91 use Type I Compaction.

- G. SUBMITTAL: The Contractor shall submit his plan, methods, and procedures for protecting existing utilities prior to beginning construction. Approval of the plan does not limit the Contractor's responsibility for utility protection, and the Contractor shall implement all additional utility protection measures as determined to be necessary in the field.

SECTION 615 - SEWER LINE CONSTRUCTION: The work under this item shall conform in their entirety to Section 615 of the MAG Standard Specifications.

All vitrified clay pipe shall be extra strength, conforming to MAG Specifications Section 743.

The trenching, bedding and backfilling of the foregoing items shall be in accordance with Section 601 of the Standard Specifications and the amendments in these special provisions.

6" Air Jumper as detailed on the project plans, shall be PVC sewer pipe, conforming to the following specifications:

P.V.C. (Polyvinylchloride) Sewer Pipe: P.V.C. pipe and fittings shall meet the requirements of ASTM Specification D 3034 for SDR35.

Prior to installation of the pipe, the Contractor shall obtain and submit a manufacturer's certification that the pipe meets the foregoing specifications and passes the tests described in this section.

Pipe shall be suitable for use as a gravity sewer conduit. Provisions must be made for contraction and expansion at each joint with rubber ring. The bell shall consist of an integral wall section with a solid cross-section rubber ring, factory assembled, securely locked in place to prevent displacement during assembly.

The pipe (6' long section) shall be subjected to impact from a free-falling tup (20-lb. Tup A.) in accordance with ASTM Method of Test D2444. No shattering nor splitting shall be evident when impacted an energy of 220 ft-lbs. (Denting is not a failure.)

All fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe.

One full length of P.V.C. pipe selected from 20 lengths shall be subjected to the following tests, which shall be conducted at 73 degrees F. (+- 3 degrees F.):

a. Pipe Stiffness

Minimum "pipe stiffness" (F y) at 5% deflection shall be 46 psi when tested in accordance with ASTM Method of Test D2411, "External Loading Properties of Plastic Pipe by Parallel-Plate Loading".

b. Joint Tightness

Two sections of pipe shall be assembled in accordance with the manufacturer's recommendation. Joints shall be tested in accordance with ASTM D3212, "Joints for Drain and Sewer Plastic Pipe Using Flexible Elastomeric Seals".

c. Flattening

There shall be no evidence of splitting, cracking, or breaking when the pipe is tested as follows:

Flatten specimen of pipe, six inches long, between parallel plates in a suitable press until the distance between the plates is forty percent of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within two to five minutes.

Trenching, bedding, and backfilling of P.V.C. pipe shall be in accordance with Section 601 of the Standard Specifications and the amendments in these special provisions.

All pipe for the air jumper line shall be measured by the linear foot, parallel to the central axis, and shall include lengths of fittings.

The accepted quantities of pipe, measured as provided above, will be paid for at the contract unit price complete-in-place. No measurement or direct payment will be made for furnishing and placing bedding material, fittings, collars, bands, or couplings joining the various sections of pipe.

SECTION 625 - MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS:

The work under this item shall conform in their entirety to Section 625 of the MAG Standard Specifications.

Special Structures: The work described in this section of the Special Provisions involves the general requirements for furnishing and installing the following special structures:

- Item No. 625-1 Siphon Inlet Structure (Sta. 22+74)
- Item No. 625-2 Siphon Outlet Structure (Sta. 19+00)

Where called for on the Plans, the general requirements, as follows, shall apply to each of the foregoing special structures.

- A. Structural excavation and backfill shall conform to the requirements of MAG 206. Compaction of backfill around

and over the structure shall be by hand-operated equipment only. No operator-mounted equipment shall be used. Jetting of pipe within 10 feet of the structure will not be permitted. Backfill around the structure will be Type III per MAG table 601-2.

- B. The site work for each special structure shall include the temporary support or relocation of utilities which are disturbed as a part of the work for the special structure. Work done to protect existing utilities shall be in conformance with applicable MAG specifications and Details and shall be done to the satisfaction of the affected utility.
- C. The top 6 inches of undisturbed soil below the structure base slabs shall be compacted to 95 percent of maximum density. Structural subbase material above structure subgrade and below the slabs shall be ABC, conforming to MAG 702, and shall be compacted to 95 percent of maximum density.
- D. Construction materials for the concrete structures shall conform to the requirements as called for on the plans, specified elsewhere in these special provisions, applicable MAG Specifications, and the following:
 - 1. Concrete: Class A, 3,000 psi
 - 2. Reinforcing Steel: Grade 60
 - 3. Structural Steel Fasteners, Supports, Anchors, Bolts, Nuts, Etc.: Stainless Steel type 316, conforming to ASTM Specifications A240, A270, or A479, as appropriate.
 - 4. Concrete Additions: Fly ash may be added to the concrete mix per MAG Specifications and as approved by City of Phoenix Materials Testing Section.
 - 5. Bearing Pads: Neoprene rubber, ozone-resistant, Durometer hardness 50.
 - 6. Coal Tar Epoxy: Koppers 300M, or equal, applied in two or more coats for a total dry film thickness of 16 mils, in accordance with manufacturer's application instructions; metal surfaces shall be prepared in accordance with Steel Structures Painting Council (SSPC) Specification SP-10 not more than 12 hours before painting.

7. Joint Sealant: One component, polyurethane base sealant, as manufactured by Grove International, Inc. (Mono-Caulk 100) or equal.
8. Epoxy Grout: Pourable, nonshrink, 5,500 psi minimum compressive strength at 24 hours, as manufactured by Master Builders, Inc., or equal.
9. Bituminous Mastic: MAG Section 729.2.
10. Concrete Bonding Agent: Epoxy adhesive, as manufactured by Everbond, Dural bond, or equal.
11. Where new concrete is poured against existing concrete surfaces, the existing surface (including concrete bricks and pipe walls) shall be sandblasted to remove all earth and foreign material. The existing surface shall then be coated with a bonding agent, applied in accordance with the manufacturer's recommendations. Bonding agents shall be Epoxy Adhesive Engineering Concrete No. 1 LPL, Hunts Process HB 100 or 151, or equal.
12. Bond breaker for concrete form surfaces shall be white pigmented curing compound, conforming to AASHTO M-148, Type 2.
13. Grout used for the repair of imperfect concrete work, filling of holes left by form bolts or ties, filling of voids around items through the concrete and in setting machinery and anchor bolts shall be five-star, nonmetallic, nonshrink grout, such as Concrete Accessories, Inc., or equal.
14. Caulking, where indicated on the plans, shall be done with a synthetic rubber sealing compound. The rubber sealing compound shall be a multi-part polyurethane, designed to cure at room temperature, to a firm, highly-resilient rubber. Application shall be in strict accordance with the manufacturer's instructions and by means of a pneumatic caulking tool or other acceptable method.
15. Fillets shall be furnished and installed in each special structure, in accordance with the general flow lines indicated on the plans. Fillets shall be constructed of Class C concrete, in accordance with MAG Section 725, or Course Brick in Mortar.

Filletts shall be hand-shaped and trowel-finished to create a smooth, even flow line which is free of obstructions to the flow.

- E. Precast deck units (roof) shall be fabricated in accordance with the notes and details indicated on the plans. The bottom and all vertical faces of the roof sections, except the outside face, shall be covered with PVC liner plate. Lifting hooks shall be cast into the deck units as indicated on the plans and shall be capable of supporting the entire weight of the roof section. Joints between walls and top sections and between adjacent top sections shall be sealed in accordance with plan details.
- F. Liner plate material for interior faces of concrete structures and roof sections shall conform to Section 741 of MAG and shall be installed on surfaces indicated on the drawings. All PVC liner plate shall be white in color. Installation shall conform to Section 741 of MAG, where applicable, and to manufacturer's recommendations. The Contractor shall have a technical representative of the PVC liner manufacturer present during initial placement of the liner to ensure that proper application procedures and materials are followed. Section 741 shall be amended to include the following paragraphs:

741.4 Application to Cast-in-Place Concrete Structures:
Special Requirements

741.4.1 Liner plate sheets shall be closely fitted and properly secured to the inner forms. Sheets shall be cut to fit curved and warped surfaces, using a minimum number of separate pieces. If liner plate joints are to be Type C-3 joints, as described below, the adjacent sheets shall be butted with not more than 1/8" opening between the sheets. A welding strip shall be fusion-welded on the backs of butt joints to prevent wet concrete from flowing around the edges.

Unless otherwise indicated on the plans, liner plate shall be returned 4" at the surfaces of contact between the concrete structure and items not of concrete. The same procedure shall be followed at joints where the type of protective lining is changed or the new work is built to join existing unlined concrete. At each return, the returned liner plate shall be sealed to the adjacent surface in contact with the plastic-lined concrete using Amercoat No. 19Y adhesive, or equal. If the joint space is too

wide or the joint surfaces are too rough to allow satisfactory sealing with this adhesive, the joint space shall be filled with 2" of densely-caulked lead wool or other approved caulking material.

741.4.2 Joints in Liner Plate for Cast-in-Place Concrete Structures

Liner plate at joints shall be free of all mortar and other foreign material and shall be clean and dry before joints are made.

Field joints in the liner plate shall be of the following described types, used as prescribed:

Type C-1: The joint shall be made with a separate 4-inch joint strip and two welding strips. The width of the space between adjacent liner plate sheets shall not exceed 2". The 4" joint strip shall lap over each liner plate a minimum of 1". It may be used at any transverse or longitudinal joint.

Type C-2: The joint shall be made by lapping sheets not less than 1 inch. One welding strip is required. The upstream sheet shall overlap the one downstream.

Type C-3: The joint consists of one welding strip applied to the face of the liner plate sheets butted together, with one welding strip applied on the back of the joint. It will not be permitted if the gap between the sheets exceeds 1/8".

All welding is to be in strict conformance with liner plate manufacturer's specifications.

- G. Where new concrete is poured against existing concrete surfaces, the existing surface (including concrete bricks and pipe walls) shall be sandblasted to remove all earth and foreign material. The existing surface shall then be coated with a bonding agent applied in accordance with the manufacturer's recommendations. Bonding agents shall be Epoxy Adhesive Engineering Concrete No. 1 LPL, Hunts Process HB 100 or 151, or equal.
- H. Grout fillets shall be furnished and installed in each special structure, in accordance with the general flow lines indicated on the plans. Fillets shall be constructed of Class C concrete, in accordance with MAG Section 725, or Course Brick in Mortar. Fill concrete shall contain an epoxy binder and nonshrink additives

containing no metallic particles, as manufactured by Master Builders, Inc., or equal. Fillets shall be hand-shaped and trowel-finished to create a smooth, even flow line which is free of obstructions to the flow.

- I. The access hatch shall be Type JD reinforced for wheel loadings up to H-20 as manufactured by the Bilco Company. Door leaf shall be aluminum diamond pattern plate. Channel frame shall be aluminum with an anchor flange around the perimeter. Hardware shall be stainless steel throughout. Doors shall be equipped with spring operators for easy operation, and an automatic hold open arm with release handle. A snap lock with removable handle shall be provided. A 1 1/2" drainage coupling shall be located in the front right corner of the channel frame. Complete shop drawings must be submitted and approved before fabrication of the hatch can begin. Installation shall be in accordance with manufacturer's instructions. Manufacturer shall guarantee against defects in material or workmanship for a period of five years.
- J. Fiberglass maintenance ladders shall be shipped from the manufacturer's shop complete and ready for installation. The manufacturer shall submit shop drawings for approval, and fabrication shall not proceed until drawings and manufacturer's certifications have been approved by the Engineer.

The ladder shall be clearly identified with a chemical-resistant tag showing the manufacturer's drawing number.

The fiberglass ladder shall meet the following requirements:

Design:

1. Design shall be as specified under the OSHA subsection entitled "Fixed Ladders".
2. A minimum safety factor of five (5) shall be applied to loads referenced in OSHA.
3. Joints, couplings, etc. shall be bonded with epoxy or mechanically fastened with non-metallic hardware.

4. Rung and side rail connections shall utilize a pin and keyway arrangement to prevent rotation of the rungs during climbing.
5. Upper surface of rungs shall have an epoxy/glass bead non-skid coating.
6. The clear rung width shall be 18", with rungs at 12" vertical centers.

Materials:

1. All material supplied under this specification shall be made of premium-grade, chemical-resistant, fire-retardant, glass-reinforced polyester resin, with the following properties:
 - a. Fire retardant Class I flame spread of 25 (ASTM E-84)
 - b. Color: yellow throughout
 - c. Mechanical properties (minimum):

(1) Ultimate tensile strength	30,000 psi
(2) Ultimate compressive strength	30,000 psi
(3) Ultimate shear	5,500 psi
(4) Modulus of elasticity	2.5 x 10 ⁶
(5) Barcol Hardness	50
2. Side rails shall have a polyurethane coating.

Workmanship:

1. All cut edges and holes shall be sealed with a compatible resin system.
 2. Side rails shall run square and true, without warp, twist, sag, or buckle.
 3. Surfaces shall be free of fiber blemish.
- K. The fiberglass grating shall be Irving type, or equivalent, and installed within the structure, as shown on the plans. Each section of the grating shall be held in place with four (4) stainless steel studs and saddle clips. The grating shall have 2 inch-deep sections, with a minimum safe load rating of 300 pounds per square foot.

- L. Removable gates and grooves shall consist of fiberglass material, as detailed on the construction plans. All fiberglass material shall be made of premium-grade, chemical-resistant, fire-retardant Class I - frame spread of 25 (according to ASTM Specification E-84) and have a Barcol hardness of 50.
- M. All open excavations shall be securely and completely fenced during nonworking hours. The excavations shall be barricaded at all times, in accordance with the Maricopa County Highway Department Barricade Manual.
- N. Shop Drawings: Prior to the manufacture and/or installation of any items in the special structures noted, the Contractor shall submit six (6) copies of shop drawings for review. The shop drawings shall consist of setting plans, details, materials of manufacture, and such other information as may be required to verify that the proposed material or equipment meets the requirements of the project documents. These shop drawing submittals are in addition to any other submittal requirements noted in other parts of the contract documents, and apply to all materials and equipment furnished for each of the special structures previously noted.
- O. Measurement and payment for each special structure shall be on a lump sum basis. The prices bid shall include all necessary excavation, backfill, and compaction to install each structure, concrete reinforcing steel, PVC lining, coatings as specified, grout fillets, and all other miscellaneous items necessary to complete the work on each structure.
- P. The Contractor shall submit his proposed detailed method of construction for each structure for review by the Engineer one month prior to construction of each structure.

The brick work and mortar for Sanitary Sewer Pipe Plugs, shall be constructed in accordance with Section 625 of the MAG Standard Specifications.

SECTION 750 - IRON WATER PIPE AND FITTINGS: Sanitary sewer line construction shall conform to Section 615 of the MAG Standard Specifications, the City of Phoenix Supplement, and the project plans, except that the lower 4 feet of the backfill, including the compaction, shall be in accordance with the plans special details. In addition, the upper portion of the backfill, between

Station 19+50 and Station 20+13 shall be compacted and lined with concrete, in accordance with the sketch in the Salt River Valley Water Users' Association license agreement, which is included in these contract documents. All other trenching, bedding and backfilling of the ductile iron pipe shall be in accordance with Section 601 of the Standard Specifications and the amendments in these special provisions. All ductile iron pipe shall be minimum Class 54, conforming to Section 750 of the MAG Standard Specifications, shall be polywrapped in accordance with Section 610.5 of the MAG Standard Specifications, and shall be fully lined.

Materials:

The owner will deliver ductile iron sanitary sewer siphon pipes and all the fittings to the Contractor at 25th Avenue at Arizona Canal, approximately 1/4 mile north of Dunlap Avenue at no charge; however, the Contractor is responsible to haul the material to the job site and store them accordingly, at no direct pay item.

The pipe materials will be available at 25th Avenue and Arizona Canal no later than November 9, 1987. The interior coal tar epoxy lining will be inspected at the site of manufacture, however, should damage occurs due to poor handling by the Contractor, the damaged area shall be repaired so that the repaired area is equal to the undamaged area in all respects. The repair will be the responsibility of the Contractor, at no additional cost to the owner.

Measurement will be made from the nearest inside wall of the siphon inlet and outlet structures for the various sizes of pipe called for on the plans and in the bidding schedule. No measurement for pipes will be made inside the interior of either the siphon inlet or outlet structure.

Payment will be made at the unit price bid per linear foot, and shall be full compensation for installing new pipe complete-in-place, as specified, including excavating, concrete encasement, backfilling, bedding, compacting, sheeting and bracing, testing, and all incidental work not specifically covered in other pay items.

General Comments: The term "or equal" when used in the description of any construction materials, shall be understood to mean "or approved equal", as determined by the Engineer.

The Flood Control District of Maricopa County reserves the right to adjust design grades or the location of the sewer lines and structures prior to construction, if it should become necessary in the opinion of the Engineer, without additional cost to the Flood Control District of Maricopa County.

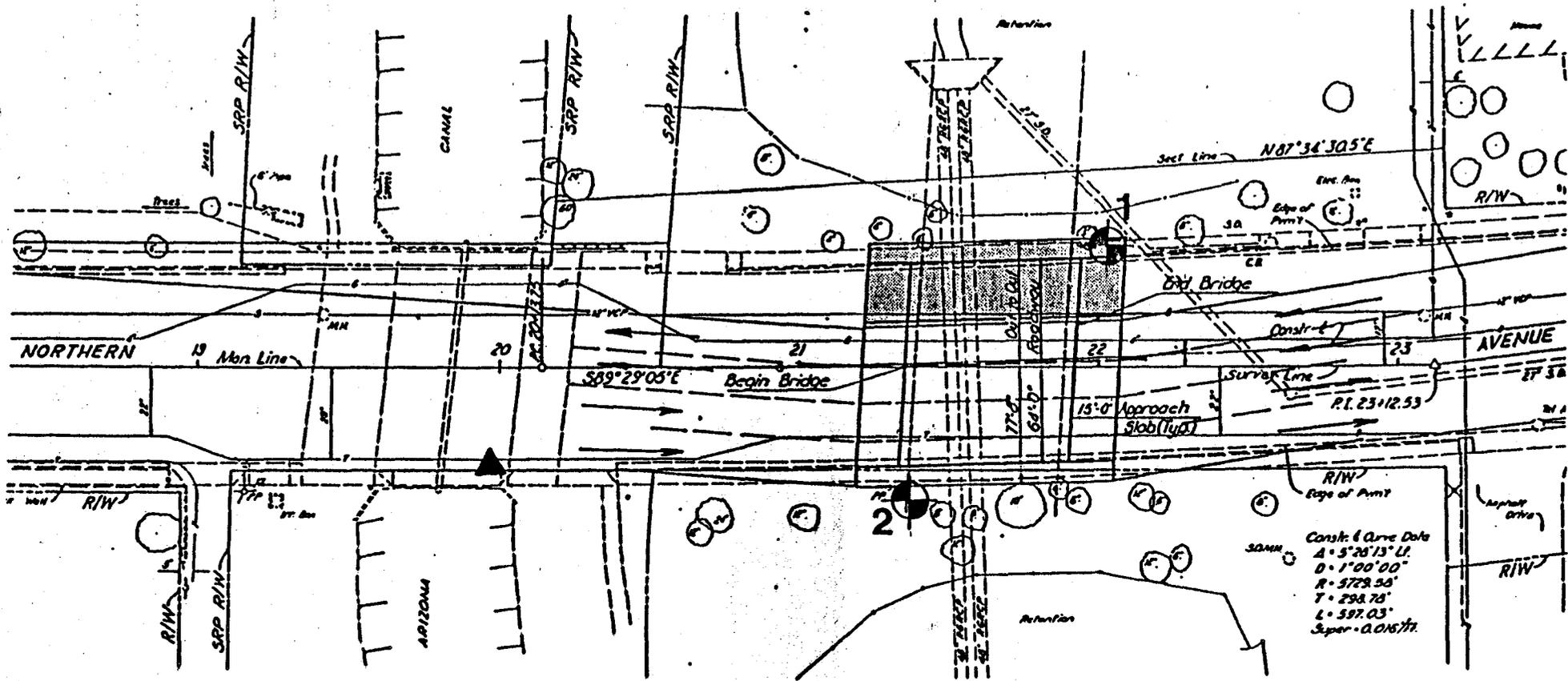
The Contractor shall exercise care to prevent damage to any existing facilities.

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

ARIZONA PUBLIC SERVICE COMPANY REQUIREMENTS

OPEN CUTTING-LINED/UNLINED CANALS

1. Clearance between the utility line and the bottom of the canal shall be 18 inches for lined canals and 48 inches for unlined canals.
2. Backfill is to be native material or material approved by the Inspector and compacted in lifts to a minimum of 90% proctor density.
3. The utility line in any portion of the canal right-of-way shall have a minimum of 36 inches of cover.
4. Manhole, valves, etc., shall not be located on the canal right-of-way.
5. Canal right-of-way is to be restored to original condition as determined by Salt River Project's Inspector. Care shall be taken to prevent any dirt or debris from falling into the canal.
6. Canal banks and floor are to be concrete lined as specified in Salt River Project's drawing #B-5458.
7. Salt River Project assumes no responsibility for damage to Licensee's installation in operation and maintenance of irrigation facilities.
7. Access to right-of-way shall be available to Salt River Project's personnel at all times.
8. The contractor assumes sole responsibility for dust control.



LEGEND



Boring Location



Benchmark: top of curb elevation
100.0 feet (assumed)

THOMAS-HARTIG & ASSOCIATES, INC.
Project No. 87-0480

LEGEND

SOIL CLASSIFICATION ASTM: D2487

COARSE-GRAINED SOIL

MORE THAN 50% LARGER THAN 200 SIEVE SIZE

Symbol	Letter	DESCRIPTION	MAJOR DIVISIONS
	GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES. LESS THAN 5% - 200 FINES	GRAVELS More than half of coarse fraction is larger than No. 4 Sieve size
	GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES. LESS THAN 5% - 200 FINES	
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES. MORE THAN 12% - 200 FINES	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES. MORE THAN 12% - 200 FINES	
	SW	WELL-GRADED SANDS OR GRAVELLY SANDS. LESS THAN 5% - 200 FINES	SANDS More than half of coarse fraction is smaller than No. 4 Sieve size.
	SP	POORLY-GRADED SANDS OR GRAVELLY SANDS. LESS THAN 5% - 200 FINES	
	SM	SILTY SANDS, SAND-SILT MIXTURES MORE THAN 12% - 200 FINES	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES MORE THAN 12% - 200 FINES	

FINE-GRAINED SOIL

MORE THAN 50% SMALLER THAN 200 SIEVE SIZE

Symbol	Letter	DESCRIPTION	MAJOR DIVISIONS
	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	SILTS AND CLAYS Liquid limit less than 50
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
	OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY	
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS	SILTS AND CLAYS Liquid limit greater than 50
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

log denotes visual approximation unless accompanied by mechanical analysis and Atterberg limits.

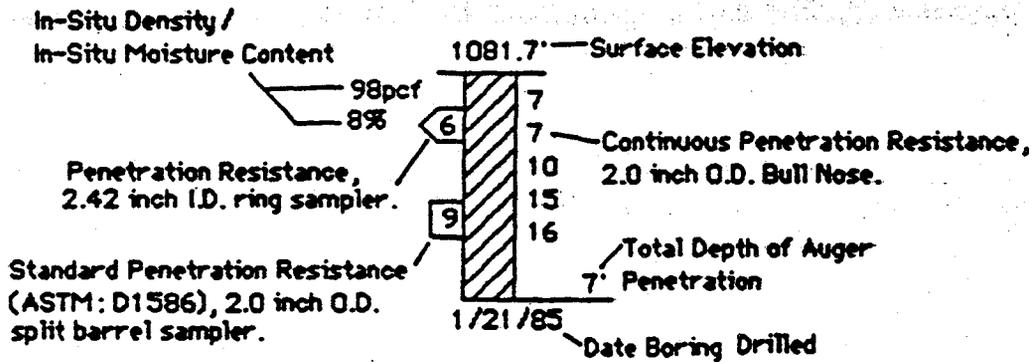
GRAIN SIZES

SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	U.S. STANDARD SERIES SIEVE			CLEAR SQUARE SIEVE OPENINGS			COBBLES	BOULDERS
	200	50	16	4	1/2"	3"		
	SAND			GRAVEL				
	FINE	MEDIUM	COARSE	FINE	COARSE			

MOISTURE CONDITION (INCREASING MOISTURE →)

DRY SLIGHTLY DAMP DAMP MOIST VERY MOIST WET (SATURATED)

(PL) (LL)



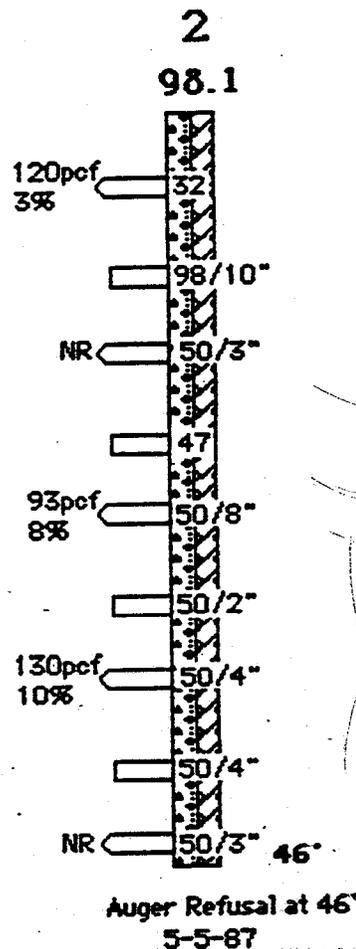
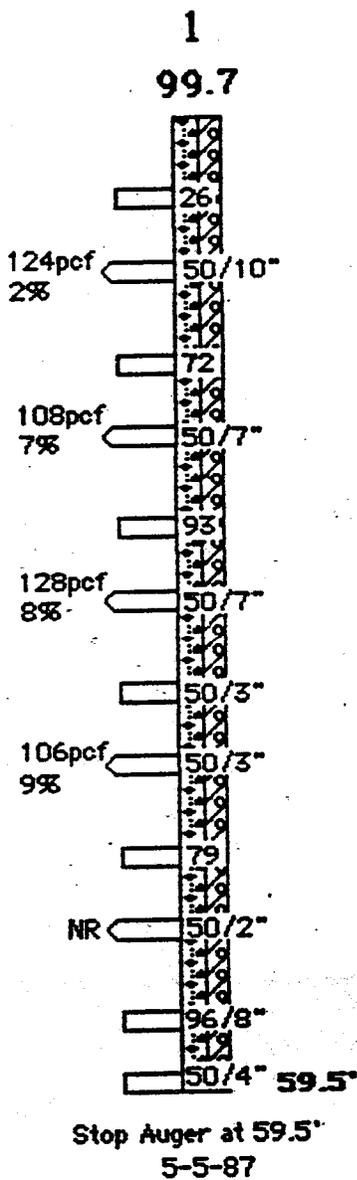
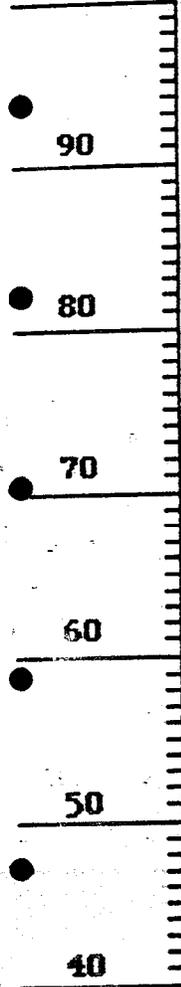
PENETRATION RESISTANCE:
Blows per foot using 140 lb. hammer with 30 inch free fall unless otherwise noted.

CONSISTENCY			RELATIVE DENSITY	
CLAYS & SILTS	BLOWS/FOOT*	STRENGTH‡	SANDS & GRAVELS	BLOWS/FOOT*
VERY SOFT	0-2	0-1/4	VERY LOOSE	0-4
SOFT	2-4	1/4-1/2	LOOSE	4-10
FIRM	4-8	1/2-1	MEDIUM DENSE	10-30
STIFF	8-16	1-2	DENSE	30-50
VERY STIFF	16-32	2-4	VERY DENSE	OVER 50
HARD	OVER 32	OVER 4		

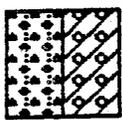
* Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-1/4 inch I.D.) split spoon (ASTM D-1586).

‡ Unconfined compressive strength in tons/sq. ft. Read from a pocket penetrometer

Elevation



LEGEND OF SOIL TYPES



SILTY TO CLAYEY GRAYELLY SAND (SM-SC);
brown; medium dense to dense to a depth of 6 to 8 feet and dense to very dense below; slightly damp.

Project No: 87-0480
Thomas-Hartig & Assoc., Inc.

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

CONTRACT FCD 87-28

THIS AGREEMENT, made and entered into this _____ day of _____, 19____,
by and between _____

of the City of _____, County of _____, State of _____,
party of the first part, hereinafter designated the CONTRACTOR, and the FLOOD
CONTROL DISTRICT OF MARICOPA COUNTY, acting by and through its BOARD OF
DIRECTORS, a political subdivision of the State of Arizona, a body politic with
corporate power, party of the second part, hereinafter designated OWNER.

WITNESSETH: That the said CONTRACTOR, for and in consideration of the sum
to be paid him by the said OWNER, in the manner and at the time hereinafter
provided, and of the other covenants and agreements hereincontained, and under
the penalties expressed in the bonds provided, hereby agrees, for himself, his
heirs, executors, administrators, successors, and assigns to as follows:

ARTICLE I-SCOPE OF WORK: The CONTRACTOR shall furnish any and all labor,
materials, equipment, transportation, utilities, services and facilities
required to perform all work for the construction of Project No. FCD 87-28
Northern Avenue Sanitary Sewer Siphon at the Arizona Canal Diversion Channel,
and to complete and totally construct the same and install the material therein
for the OWNER, in a good and workmanlike and substantial manner and to the
satisfaction of the OWNER through its Engineers and under the direction and
supervision of the Engineer, or his properly authorized agents and strictly
pursuant to and in conformity with the Plans and Specifications prepared by the
Engineers for the OWNER, and with such modifications of the same and other
documents that may be made by the OWNER through the Engineer or his properly
authorized agents, as provided herein.

ARTICLE II-CONTRACT DOCUMENTS: The Invitation for Bids, Plans, Standard
Specifications and Details, Special Provisions, Addenda, if any, and Proposal,
as accepted by the BOARD OF DIRECTORS, Performance Bond, Payment Bond,
Certificates of Insurance, and Change Orders, if any, are by this reference
made a part of this Contract to the same extent as if set forth herein in full.

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 con-
struction 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 within forty (40) days after final
inspection and acceptance of the work.

IN WITNESS WHEREOF: Four (4) 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.

The CONTRACTOR agrees that this Contract, as awarded, is for the stated work, and understands that payment for the total work will be made on the basis of the indicated amount(s), as bid in the Proposal.

PARTY OF THE FIRST PART

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PARTY OF THE SECOND PART

By: _____
Chairman, Board of Directors

Date: _____

RECOMMENDED BY:

ATTEST:

Chief Engineer and General Manager
Flood Control District
of Maricopa County

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: _____

Date: _____

CONTRACT NO. FCD 87-28

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, State of Arizona [hereinafter called the Obligee] in the amount of _____ dollars [\$ _____], for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 19____, for _____

_____ which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall promptly pay all moneys 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 were copied at length herein.

The prevailing party or any party which recovers judgment 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 _____, 19____.

PRINCIPAL SEAL

BY: _____

AGENCY OF RECORD

SURETY SEAL

BY: _____

AGENCY ADDRESS

POWER OF ATTORNEY SEAL

BY: _____

CONTRACT NO. FCD 87-28
PAYMENT BOND

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 the Flood Control District of Maricopa County, dated the _____ day of _____, 19____, for _____

_____ which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extension thereof, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligation shall be void, otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of said Title, Chapter, and Article, to the extent as if it were 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 _____, 19____.

AGENCY OF RECORD

AGENCY ADDRESS

CONTRACT NO. FCD 87-28
PERFORMANCE BOND

PRINCIPAL SEAL

BY: _____

SURETY SEAL

BY: _____

POWER OF ATTORNEY SEAL

BY: _____

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CERTIFICATE OF INSURANCE

Northern Avenue Sanitary Sewer Siphon
at the Arizona Canal Diversion Channel

CONTRACT FCD 87-28

PROJECT TITLE

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
	<input checked="" type="checkbox"/> COMPREHENSIVE GENERAL 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 each occurrence \$5,000 PROPERTY DAMAGE \$1,000 OR BODILY INJURY AND PROPERTY DAMAGE Combined \$5,000	
	<input checked="" type="checkbox"/> COMPREHENSIVE AUTO LIABILITY & NON-OWNED			SAME AS ABOVE	
	<input type="checkbox"/> EXCESS LIABILITY			NECESSARY IF UNDERLYING NOT ABOVE MINIMUM	
	<input checked="" type="checkbox"/> WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY	each accident \$100
	<input type="checkbox"/> OTHER				

The Flood Control District of Maricopa County is added as an additional insured as respects work done for the District by the named insured as required by statute, contract, purchase order or otherwise requested. 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 fifteen days written notice to the District. THIS CERTIFICATE IS NOT VALID UNLESS COUNTERSIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE INSURANCE COMPANY.

NAME AND ADDRESS OF CERTIFICATE HOLDER
 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, 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 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.

The above cost of damages incurred by the Flood Control District of Maricopa County or any of its departments, agencies, officers or employees shall include in the event of an action, court costs, expenses for litigation and reasonable attorney's fees.

Date _____ Contractor _____

CERTIFICATE OF INSURANCE
CONTRACT FCD 87-28

FLOOD CONTROL DISTRICT of Maricopa County
(TABULATION OF BIDS)

PROJECT
NORTHERN AVENUE SANITARY SEWER SIPHON AT THE A.C.D.C.

CONTRACT FCD
87-28

DATE OPENED
SEPT 17, 1987

SHEET
1

ITEM NO.	DESCRIPTION	LLOYD BROS				T + T CONSTR.		WESTERN SUN CONST.							
		QUANTITY	UNIT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT
336-1	PAVEMENT CUT + REPLACEMENT	24	Sq Yd	42.00	960.00	30.00	720.00	129.00	3096.00						
336-2	CANAL LINING REPLACEMENT (SRP-STD6)	1	Sum	1200.00	1200.00	3000.00	3000.00	5400.00	5400.00						
340-1	REMOVE + REPLACE CONC. SIDEWALK (C.A.P. 1230)	30	Sq Ft	6.00	180.00	5.00	150.00	20.00	600.00						
350-1	REMOVAL OF EXISTING IMPROVEMENTS	1	L. Sum	8000.00	8000.00	3000.00	3000.00	4000.00	4000.00						
415-1	SEWER PIPE (12")	40	L.Ft.	60.00	2400.00	45.00	1800.00	140.00	5600.00						
425-1	INLET SIPHON STRUCTURE	1	EA.	16800.00	16800.00	37000.00	37000.00	34425.00	34425.00						
425-2	OUTLET SIPHON STRUCTURE	1	EA.	17500.00	17500.00	33000.00	33000.00	34425.00	34425.00						
425-3	MANHOLE (MAG Det. 426, Type A)	1	EA.	2400.00	2400.00	3500.00	3500.00	2075.00	2075.00						
425-4	MANHOLE (MAG Det. 420)	1	EA.	2600.00	2600.00	2600.00	2600.00	1425.00	1425.00						
745-1	PIPE (PVC) (6") (SCHEDULE 40)	233	L.Ft.	21.00	4893.00	16.00	3728.00	20.70	4823.10						
750-1	PIPE, DUCTILE IRON (8") (PIPE INSTALLATION)	810	L.Ft.	140.00	113400.00	150.00	121500.00	232.00	187920.00						
TOTAL					170333.00		209998.00		283789.10						

BID SUMMARY & CHECK LIST

NORTHERN AVENUE SANITARY SEWER
RELOCATION AT THE ARIZONA CANAL

PROJECT: DIVERSION CHANNEL

CONTRACT FCD: 88-11

DATE: March 15, 1989

FCD Personnel in attendance:

LEAHNA CUMBERLAND
JOY KESKIM
ELENA HASKINSKI
ANDY ANDERSON
BOB PAYETTE
H. SHIVASWAMY
PAUL LINDGREN

Item	NAME TECH ENGRG. CONSTRUCT. CORP.	SWENDEL- ROBBINS	SITE-TEC CORP.	HORIZON ENGRS & CONSTR.	HARD ROCK CONSTR. CO.	C-SEW CONTRACTORS INC.
Bid Form Pg 3		✓	✓	✓	✓	✓
Addenda Noted Pg 4	✓	✓	✓	✓	✓	✓
Schedule Complete Pg 10	✓	✓	✓	✓	✓	✓
No Exceptions Pg 10	✓	✓	✓	✓	✓	✓
Changes Initialed Pg 10	✓	✓	✓	✓	✓	✓
Proposal Signed Pg 6	✓	✓	✓	✓	✓	✓
Surety Bond Pg 7	✓	✓	✓	✓	✓	✓
No Collusion Affidavit Pg 8	✓	✓	✓	✓	✓	✓
Tax Payment Affidavit Pg 9	✓	✓	X No	✓	✓	✓
License Verification Pg 10	✓	✓	✓	✓	✓	✓
MBE/WBE Participation Pg 13	✓	✓	✓	✓	No	✓
Total Contract	128,248. ⁵⁰	150,692. ³⁵	168,792. ⁰⁰	149,815. ⁰⁰	153,276. ⁸⁵	149,319. ⁸⁹

①
⑤
⑧
④
⑦
③

Engineers Estimate \$ 170,379.⁰⁰

BID SUMMARY & CHECK LIST

NORTHERN AVENUE SANITARY SEWER
RELOCATION AT THE ARIZONA CANAL
DIVERSION CHANNEL

PROJECT: _____ CONTRACT FCD: 88-11 DATE: March 15, 1989

FCD Personnel in attendance:

Item	NAME <i>SHIVA-STREPHANS</i>	<i>WESTERN SUN CONTRACTORS</i>	<i>MORDEX CONTRACTING INC.</i>	<i>DON SHORT CONTRACTING</i>	<i>TIFFANY CONSTRUCTION Co.</i>	
Bid Form	✓	✓	✓	✓	✓	
Addenda Noted	✓	✓	✓	✓	✓	
Schedule Complete	✓	✓	✓	✓	✓	
No Exceptions	✓	✓	✓	✓	✓	
Changes Initialed	✓	✓	✓	✓	✓	
Proposal Signed	✓	✓	✓	✓	✓	
Surety Bond	✓	✓	✓	✓	✓	
No Collusion Affidavit	✓	✓	✓	✓	✓	
Tax Payment Affidavit	✓	✓	✓	✓	✓	
License Verification	✓	✓	✓	✓	✓	
MBE/WBE Participation	✓	✓	✓	✓	✓	
Total Contract	<i>184,818.⁰⁰</i>	<i>177,888.⁰⁰</i>	<i>178,334.⁰⁰</i>	<i>152,490.⁰⁰</i>	<i>140,089.⁰⁰</i>	

(11)
(9)
(10)
(6)
(2)

Engineers Estimate \$ _____

Engineer's Estimate
9/2/87

ESTIMATED CONSTRUCTION COST

Project : Northern Avenue Sanitary Sewer Siphon For the
Arizona Canal Diversion Channel
Phoenix, Arizona

DATE: August 31 , 1987

Contract : FCD 87-28

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (In Words)	UNIT PRICE	EXTENSION
336-1 Pavement Cut & Replacement	24	Sq.Yd.		\$55.00	\$1,320.00
336-2 Canal Lining Replacement (SRP STDS.)	1	L.Sum		10,000.00	10,000.00
340-1 Remove & Replace Conc. Sidewalk (C.O.P 1230)	30	Sq.Ft.		3.50	105.00
350-1 Removal Of Existing Improvements	1	L.Sum		5,000.00	5,000.00
615-1 Sewer Pipe (12")	40	L.Ft.		45.00	1,800.00
625-1 Inlet Siphon Structure	1	Each		30,000.00	30,000.00
625-2 Outlet Siphon Structure	1	Each		\$30,000.00	\$30,000.00

Contract : FCD 87-28

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE (In Words)	UNIT PRICE	EXTENSION
625-3 Manhole (MAG Det. 426, Type A)	1	Each		\$3,500.00	\$3,500.00
625-4 Manhole (MAG DET. 420)	1	Each		3,000.00	3,000.00
745-1 Pipe (PVC)(6")(Schedule 40)	233	L.Ft.		15.00	3,495.00
750-1 Pipe , Ductile Iron (8") (Pipe Installation)	740	L.Ft.		100.00	74,000.00
800-1 Elec. Conduit, (PVC)(4-5") (APS STDS.)	1	L.Sum		\$0.00	\$0.00

NOTE:

Item 800-1 is not part of this project.

SUB-TOTAL	\$162,220.00
20 % CONTINGENCY	\$32,444.00
TOTAL	\$194,664.00

BID SUMMARY & CHECKLIST

EE 195,000

2:00 p.m.

PROJECT: Northern Ave. Sanitary Sewer Siphon at the A.C.D.C.

CONTRACT FCD: 87-28 DATE: Sept. 17, 1987

FCD Personnel

Item	Name Nikko Constructors	Western Sun Constructors	Pipe Tech	Lloyd Bros Construction	T & T Constr
Schedule Complete	✓	✓	✓	✓	✓
Addenda Noted	✓	✓	✓	✓	✓
No Exceptions	✓	✓	✓	✓	✓
Changes Initialed	✓	✓	✓	✓	✓
Proposal Signed	✓	✓	✓	✓	✓
License Number					
Bid Security	✓	✓	✓	✓	✓
No Collusion Affidavit	✓	✓	✓	✓	✓
1					
2					
3					
TOTAL CONTRACT	295,344. ⁰⁰	283,789. ¹⁰	293,222. ⁰⁰	170,333. ⁰⁰	209,998. ⁰⁰
	5	3	4	1	2