

Planning

Bid Range \$350-\$450,000

SPECIAL PROVISIONS

FOR

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

SEWERLINE RELOCATION FROM 9TH AVENUE TO DUNLAP AVENUE
WITH INVERTED SIPHON AT DUNLAP AVENUE

ARIZONA CANAL DIVERSION CHANNEL

CONTRACT NO. FCD 87-27



AUGUST 17, 1987

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

A118.520

SPECIAL PROVISIONS

FOR

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 87-27

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INVITATION FOR BIDS
(Construction Contract)

Project: Sewerline Relocation from 9th
Ave. to Dunlap Ave. with
Inverted Siphon at Dunlap Ave.

Ref. Invitation FCD 87-27
Date: August 24, 1987
Issued by: Flood Control District
of Maricopa County

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

SEALED BIDS, IN SINGLE COPY FOR THE WORK DESCRIBED HEREIN WILL BE RECEIVED UNTIL 10:00 AM, 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, construction of approximately 1830' of 8" sewer line and other miscellaneous related work.

INVITATION FOR BIDS
NO. FCD 87-27

THE WORK SHALL COMMENCE WITHIN SEVEN (7) CALENDAR DAYS AND BE COMPLETED
by January 31, 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 87-27

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION FOR BIDS, FCD 87-27
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 87-27

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 87-27

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
INVITATION FOR BIDS, FCD 87-27
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>
210	L.F.	4" Waterline
390	L.F.	6" D.I.P. Waterline
370	L.F.	30" RGRCP Sanitary Sewer (Install only)
1830	L.F.	8" VCP Sanitary Sewer
200	L.F.	3 Barrel Siphon

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 Dunlap Avenue and the Arizona Canal, and along the north side of the Arizona Canal between 9th Avenue and Dunlap Avenue.

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

INVITATION FOR BIDS
CONTRACT NO. FCD 87-27

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
(Construction Contract)

BID FORM

Project: Sewerline Relocation from 9th
Ave. to Dunlap Ave. with
Inverted Siphon at Dunlap Ave.

Invitation FCD 87-27
Date: August 24, 1987

Location: Dunlap 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.

PROPOSAL
CONTRACT FCD 87-27

BIDDING SCHEDULE

PROJECT: Sewerline Relocation from 9th Avenue to Dunlap Avenue
with Inverted Siphon at Dunlap Avenue

CONTRACT: FCD 87-27

Item No.	Approximate Quantity	Unit	Description	Unit Cost (in writing) and /100 dollars	Unit Cost	Extended Amount
201-1	1	L.S.	9th Avenue Demolition and Barrier Replacement			
336-1	260	S.Y.	Sawcut, Remove and Surface Replacement, Type "A" Detail 200			
336-2	13	S.Y.	Surface Replacement, Bituminous Bike Path			
336-3	1	L.S.	Surface Replacement, S.R.P. Channel Lining			
340-1	45	L.F.	Sawcut, Remove and Replace Curb & Gutter, Std. Detail 220, Type "A", H = 6"			
350-1	328	S.F.	Sawcut, Remove and Replace Sidewalk Driveway and Valley Gutter			
350-2	200	L.F.	Temporary Concrete Barrier Curb			
350-3	1	L.S.	Miscellaneous Removal and Other Work			
401-1	200	HR	Uniformed, Off Duty Law Enforcement Officer			
401-2	1	L.S.	Traffic Control			
610-1	210	L.F.	Furnish and Install 4" Waterline Relocation			
610-2	390	L.F.	Furnish and Install 6" DIP Waterline Relocation			
610-3	4	EACH	Furnish and Install 6" Gate Valve			
610-4	2	EACH	Furnish and Install 6" F.H. Complete			
610-5	30	L.F.	Furnish and Install 6" Waterline for F.H.			

BIDDING SCHEDULE

PROJECT: Sewerline Relocation from 9th Avenue to Dunlap Avenue
with Inverted Siphon at Dunlap Avenue

CONTRACT: FCD 87-27

Item No.	Approximate Quantity	Unit	Description	Unit Cost (in writing) and /100 dollars	Unit Cost	Extended Amount
615-1	370	L.F.	Install 30" RGRCP Sanitary Sewer			
615-2	1830	L.F.	Furnish and Install 8" VCP Sanitary Sewer			
615-3	200	L.F.	Furnish & Install 8" Air Jumper Line			
615-4	200	L.F.	Furnish & Install 3-Barrel Siphon (14", 16" & 16" Mechanical Joint D.I.P. Coal Tar Epoxy Lined)			
625-1	12	EACH	4' Dia. Sanitary Sewer Manhole, Std. Det. 420, 424			
625-2	2	EACH	5' Dia. Sanitary Sewer Manhole, Det. 420 and 424			
625-3	2	EACH	Furnish and Install P.V.C. Lining for 5' Dia. M.H.			
625-4	1	EACH	Furnish and Install Siphon Outlet Structure			
625-5	1	EACH	Furnish and Install Siphon Inlet Structure			
625-6	3	EACH	Manhole Structures for MH1, MH2, MH3			
625-7	7	EACH	Furnish and Install Sanitary Sewer Pipe Plugs, Std. Det. 427			
625-8	13	EACH	Fill and Abandon Manhole and Plug Pipe(s)			

The Bidder hereby acknowledges receipt of and agrees his proposal is based on the following Addenda

Total _____

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.

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:

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

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CONSTRUCTION SPECIAL PROVISIONS
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD CONTRACT NO. 87-27

FOR

SEWERLINE RELOCATION FROM 9TH AVENUE TO DUNLAP AVENUE

SP-A GENERAL SPECIFICATIONS

- SP-A1 PROPOSED WORK: The work includes the construction of approximately 2205LF of 8" and 30" gravity sanitary sewer, a 170LF three-barrel sanitary sewer siphon with special siphon inlet and outlet structures. Miscellaneous waterline and utility relocations related to the project will also be necessary for completion of the project. This project is located in Phoenix, Arizona, on Dunlap Avenue at the Arizona Canal Diversion Channel, between 7th Avenue and 3rd Drive.
- SP-A2 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, the latest revision of the City of Phoenix Supplements to the MAG Uniform Standard Specifications and Details and the City of Phoenix Traffic Barricade Manual.
- SP-A3 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 Plan.
- SP-A4 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 CFS Part 5).
- SP-A5 CONTRACT TIME: The Contractor shall start work within seven (7) calendar days of Notice to Proceed and complete all work on the project by January 31, 1988. Work within the area of the Arizona Canal right-of-way shall be completed during the dry-up period between November 13 to December 12. Work on the sewerline north of Dunlap Avenue, between manhole 8 and manhole 13, may not commence until January 2, 1988.
- SP-A6 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.
- SP-A7 PROGRESS SCHEDULE: The Contractor shall submit his proposed work progress schedule to the Chief Engineer and General Manager for approval before starting the work.

SP-A8 MATERIAL SOURCES: The Owner shall provide the pipe materials for the 30-inch gravity sewer. Approximately 400 LF of 30-inch RGRCP with PVC lining will be available, no later than November 9, 1987, at 25th Avenue and the Arizona Canal. The Contractor must make arrangements to move the 30-inch pipe to the job site. Concrete, Aggregate Base and Pipe shall be obtained from commercial sources.

The remaining pipe materials will be supplied by the Contractor. The Contractor shall pay all royalties, or any other charges or expenses, incurred in connection with the securing and hauling of the material to the jobsite. The Contractor will be required to furnish the Engineer with a list of his proposed commercial sources prior to use.

SP-A9 GENERAL COMMENT: The following segments of this Special Provision, SP-A, SP-B, SP-C, SP-D, SP-E, and SP-F are supplements to the MAG Uniform Standard Specification.

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.

SP-A10 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 liquidated damages.

SP-B SUPPLEMENT TO PART 100 - GENERAL CONDITIONS

SP-B1 SECTION 101.2 - DEFINITIONS AND TERMS: The following definitions of the MAG Standard Specification shall be changed to read as follows:

- o **Budget Project** - 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.

- o Engineer - The Chief Engineer or General Manager of the Flood Control District of Maricopa County acting directly or through his authorized representative.
- o Owner - The City of Phoenix, acting through its legally constituted officials, officers, or employees.

SP-B2 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, shall 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.

SP-B3 SECTION 102.5 - PREPARATION OF PROPOSAL: The Contractor shall be appropriately licensed as a Contractor in the State of Arizona for performing the type of work in this project.

SP-B4 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 co-insured, and a certificate of insurance shall be filed with the Flood Control District of Maricopa County.

SP-B5 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.

SP-B6 SECTION 105.2 - PLANS AND SHOP DRAWINGS: Sub-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 Aluminum Items: Stop Logs, Ladders, Slide Gates, etc.
- K. Structural Design Calculations and Details for All Concrete Structures, as Required.
- L. Hatch Covers and Appurtenances
- M. Waterstops
- N. Detailed Sequence of Construction for Structures

SP-B7 SHOP DRAWING REVIEW: The Contractor, at his own expense, shall make such changes on the shop drawings as may be necessary to conform to the plans and specifications. Prior to return of such drawings, marked "Furnish as Submitted" or "Furnish as Noted", any work which the Contractor may do on the fabrications covered by the same shall be at his own risk, as the 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 submittals.

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

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

Construction of this project shall not begin until the shop drawings and line layouts have been reviewed. Corrections required on the shop drawings will not constitute a valid reason for delay in the project schedule.

SP-B8 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	Bob Sleighter	842-7744
Salt River Project (Overhead Power)		236-8888
Salt River Valley Water Users Association ..	Slavko Jovanovic ...	236-5072
Arizona Public Service	Al Field	371-6951
Location Staking (APS, Mountain Bell, SRP)		263-1100
City of Phoenix (Water and Sewer)		262-6651
Maricopa County Highway Department		233-8600
Flood Control District of Maricopa County		262-1501

SP-B9 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 additional temporary bench marks as needed 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 and sewerline 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 licensed land surveyor in Arizona.

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.

SP-B10 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.

SP-B11 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.

SP-B12 SECTION 108.5 - LIMITATION OF OPERATIONS: Should the Contractor elect to perform any work after regular working hours, on weekends, or legal holidays, any charges incurred by the Flood Control 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 between November 13, 1987 to December 12, 1987.

SP-B13 SECTION 108.7 - DETERMINATION AND EXTENSION OF CONTRACT TIME and SECTION 108.9 - FAILURE TO COMPLETE ON TIME: Sub-Sections 108.7 and 108.9 of the MAG Standard Specifications are amended to include the following:

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 procedure 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 Arizona Canal Right-of-way during the dry-up period of the Arizona Canal as previously defined under SP-A5 Contract Time.

Failure To Complete On Time: Time is of the essence in completing the portion of the project within the Arizona Canal right-of-way. Therefore, in Sub-Section 108.7, Determination and Extension of Contract Time, and Sub-Section 108.9, Failure to Complete on Time, MAG Table 108 is deleted, and the following paragraphs are substituted:

Work within Arizona Canal Right-of-Way

To assure completion of the work within the Arizona Canal right-of-way 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.

SP-C SUPPLEMENT TO PART 200 - EARTHWORK

SP-C1 SECTION 201 - CLEARING AND GRUBBING: This work 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 at the Contractors expense.

Except as noted on the plans, the Contractor shall note that trees on private property shall not be removed without prior approval of the property Owner, and the Contractor will be required to work around trees and protect them from damage during the course of his work.

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.

Bid Item 201-1 shall include sawcut, pavement, curb and gutter removal at 9th Avenue as shown on the plans and barrier placement.

SP C2 SECTION 206 - STRUCTURE EXCAVATION AND BACKFILL: Structure excavation and backfill shall conform to Section 206 of the MAG Standard Specifications, except that structure backfill will be Type III as specified in Table 601-2.

SP-C3 SECTION 225 - WATERING: The work shall be in accordance with Section 225 of the MAG Standard Specifications.

SP-D SUPPLEMENT TO PART 300 - STREETS AND RELATED WORK

SP-D1 SECTION 336 - PAVEMENT MATCHING AND SURFACING REPLACEMENT: The ABC supplier shall provide certificates of compliance and test results indicating conformance with MAG Standard Specifications. Pavement matching and bituminous bike path replacement for this project shall conform in their entirety to Section 336 of the MAG Standard Specifications. Surfacing replacement will be paid for under Bid Item 336-1 and bike path replacement under 336-2.

Bid Item 336-3, pavement removal and replacement at the canal crossing, shall be constructed in accordance with the Salt River Valley Water Users' Association sketch in Appendix A, which is made a part of these contract documents, and shall otherwise conform to Section 336 of the MAG Standard Specifications.

Measurement and payment for this item shall be on a lump sum basis.

SP-D2 SECTION 340 - CONCRETE CURB, GUTTER, SIDEWALK, DRIVEWAY AND ALLEY ENTRANCE: Bid Item 340-1 of this project shall conform in its entirety to Section 340 of the MAG Standard Specifications. Sawcutting, removing, and constructing the 6" high extruded curb at the locations shown on the project plans or otherwise designated, matching in cross-section, color, and texture and curb removed shall be included in Bid Item 340-1.

Materials: Portland cement, water, and admixtures shall conform to the requirements of Section 725.

Fine aggregate and coarse aggregate shall conform to the requirements of Section 725. Coarse aggregate shall conform to the requirements of Aggregate Base in Table 702 of the MAG Standard Specifications.

The Contractor may add additional fine aggregate to the aggregate for the curb, in order to facilitate finishing. Fine aggregate for this purpose shall be non-plastic and shall conform to the following grading requirements:

Passing No. 4 Sieve	100 per cent
Passing No. 200 Sieve	0 - 100 per cent

Fine aggregate added for this purpose shall not exceed 25 per cent of the total aggregate for the concrete curb.

Liquid membrane-forming shall conform to the requirements of AASHTO M148, Type I, Class A.

The minimum cement content per cubic yard of concrete shall be 470 pounds.

The Contractor shall be responsible for furnishing, proportioning, and mixing the various ingredients; however, approval of the proposed materials and proportioning and mixing shall be obtained prior to any concrete operations.

Concrete curb shall be constructed either by the use of conventional fixed forms or by slipform curb placing machines. The surface on which the curbs are to be placed shall be cleaned of all loose dirt and debris prior to placing.

The work shall be performed so as not to mar the paved surface. Concrete placed in fixed forms shall be thoroughly consolidated.

If slipform equipment is used to construct extruded curb, such equipment shall be designed specifically for the work. The slipform machine shall be capable of producing curb equal to, or better than, that produced by the use of fixed forms. If the curb produced by such machines is not acceptable, the use of such machines shall be terminated.

Curbs shall present a neat appearance. The finish normally associated with the use of slipform curb placing machines, including the use of movable forms, will be considered as acceptable for the finishing of concrete curb. Where bituminous material is being applied to the adjacent roadway, curbs shall be protected so that they are not spattered or discolored.

Concrete curb shall be cured by the application of liquid membrane-forming compound. The time at which it is to be applied and the rate of application shall be approved by the Engineer.

Basis of Payment: The accepted quantities of concrete curb will be paid for at the contract unit price per linear foot, complete in place.

SP-D3 SECTION 350 - REMOVAL OF EXISTING IMPROVEMENTS: In addition to the items listed in Subsection 350-3 of MAG Standard Specifications, the following shall be included:

- K. **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.
- L. **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.

- M. Any and all items not specifically set forth as a separate pay item.
- N. Sawcutting and matching existing pavements and curbs, gutters, etc.
- O. Relocating positions of existing signs to be staked by the Inspector.
- P. Relocating positions of existing plants within the right-of-way to be staked by the Inspector.
- Q. Curb and Gutter, where designated on plans.

Payment for this additional work will be made at the contract price for Bid Item 350-3 Miscellaneous Removal and Other Work.

SP-E SUPPLEMENT TO PART 400 - RIGHT-OF-WAY AND TRAFFIC CONTROL

SP-E1 SECTION 401 - TRAFFIC CONTROL: Add the following to MAG Sub-Section 401.7, Payments: Payment for Bid Item 401-2, Traffic Control, will be paid for on a lump sum basis.

SP-E2 SECTION 401.5 - GENERAL TRAFFIC REGULATIONS:

- A. Dunlap Avenue and 7th Avenue shall be considered as major streets. The Contractor shall maintain them open to traffic (one 12-foot lane in each direction) at all times. Access to local businesses is required at all times.
- B. All traffic and/or traffic control devices on this project shall be provided, maintained, and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, latest revision.
- C. Permission to restrict City streets, sidewalks, and alleys (street closure permits) shall be requested as specified in Section III of the Traffic Barricade Manual.
- D. Unless otherwise provided for, all traffic on this project shall be regulated as specified in Section IV of the Traffic Barricade Manual.

SP-F SUPPLEMENT TO PART 600 - WATER AND SEWER

SP-F1 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 shown in Appendix B. It is the Contractor's responsibility to make his own determination as to actual existing conditions."

SP-F2 SUBSECTION 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. Payment will be limited to the trench widths shown on the plans."

SP-F3 SUBSECTION 601.2.3 - TRENCH GRADE: Subsection 601.2.3 Trench Grade, the second paragraph is modified to read:

"For all pipe, the Contractor shall overexcavate the bottom of the trench by a minimum of 4 inches or 1/12 the O.D."

SP-F4 SUBSECTION 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."

SP-F5 SUBSECTION 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 Subsection 601.4."

The Contractor may elect, at no cost to the Flood Control District 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 allowed for this work."

SP-F6 SUB-SECTION 601.4.2 - BEDDING: The first paragraph is modified to read:
"For all pipe, the bedding material from the bottom of the trench to 1 foot over the top of the pipe shall be ABC or Select Material, Type "B", per Section 702 compacted to a minimum density of 95 percent when tested by AASHTO T-99 (Method "A") with rock correction and T-191."

All bedding shall be included in the unit price bid for the pipes.

SP-F7 SUB-SECTION 601.4.3 - BACKFILL: Delete the fourth paragraph in its entirety, and substitute the following:

"When mechanical compaction is to be used, the Contractor shall 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."

SP-F8 SUB-SECTION 601.4.3 - BACKFILL: Amend 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 removed to correct the deficiencies prior to replacement, all at the Contractor's expense.

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 the Contractor's expense.

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 jetting methods.

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. Unstable areas as determined by the Engineer shall be corrected by the Contractor at his expense."

SP-F9 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.

SP-F10 SUBSECTION 601.4.4 - COMPACTION DENSITIES: Compaction densities shall conform to Subsection 601.4.4. Modify the limits as follows:

- o From MHI to the Siphon Outlet structure use Type I compaction.
- o From the Siphon Outlet to the Siphon Inlet, use Type I compaction to a minimum depth of 8-feet above the pipes.
- o Type III for a minimum of 10-feet around structures.
- o Type II for all other locations.

SP-F11 SECTION 610 - WATER LINE CONSTRUCTION: The Construction of the water line relocation and appurtenances shall conform to the applicable MAG Standard Specification and Details, and City of Phoenix Supplements thereto. Fire hydrants furnished by the Contractor shall conform to the requirements of Section 756.

SP-F12 SECTION 615 - SEWER LINE CONSTRUCTION: Sanitary sewer line construction shall conform to Section 615 of the MAG Standard Specifications, the City of Phoenix Supplement, and the project plans. The Contractor shall maintain continuous flows through existing sewer lines until they are connected to the new sewer line under this project.

A. Sewer Pipe:

Only the 30" sewer pipe (400 L.F.) will be provided by the owner on or before November 9, 1987 and will be reinforced concrete pipe Class IV, 3000-D, according to latest revision ASTM-C76. The Contractor shall be responsible for handling and delivery of the 30-inch pipe to the jobsite. The pipe will have previously been inspected and certified at the 25th Avenue jobsite. The pipe will be available in the vicinity of the Arizona Canal and 25th Avenue. Remaining 30-inch pipe from the job shall be delivered to the County Yard on Glendale Avenue - 1/2 mile east of the Glendale airport. The cost to deliver the pipe to the jobsite and excess materials to the FCD Country Yard will be included in the unit price of the 30-inch pipe. All other extra materials will be the property of the Contractor.

The interior portion of all concrete pipe joints shall be mortared prior to welding the joints of the lining. Mortar shall conform to MAG 736.3.1. *welded certified welder*

The Contractor shall furnish and install 8-inch vitrified clay pipe and 14 and 16-inch ductile iron sewer pipe according to MAG Section 601, 615, 743, 750 and to COP Standard Details 1120 through 1126.

B. Siphon Pipe:

Sewer pipe in the inverted siphon and adjacent to the siphon inlet and outlet structures shall be mechanical joint ductile iron pipe, as

indicated on the plans. Mechanical joint ductile iron pipe shall be Class 54, conforming to MAG Section 750. All ductile iron pipe shall be fully lined with a coal tar epoxy lining as specified below.

Bidding for ductile iron sewer pipe shall be in accordance with MAG Section 601, and the details shown in the plans.

C. Coal Tar Epoxy Lining:

The coal tar epoxy lining for the ductile iron siphon pipe Item 615-5, shall conform to the following:

1. General: Coal tar epoxy lining compound must be a catalized three-component coal tar epoxy compound capable of at least 40 mils minimum dry film thickness in an application process whereby delamination will not occur. The material must also meet the following minimum performance requirements:
 - a. A direct impact resistance as measured by ASTM D 2794 at 35 mils dry film thickness on ductile iron panels. The material shall pass 60 inch-pounds of impact.
 - b. An abrasion resistance of 25 liters of sand per mil as measured by ASTM D 968.
 - c. The coal tar epoxy used shall meet the requirements of Military Specification DOD-P-23236A (SH), Type I, Class 2.

All coal tar epoxy lining shall be done by the pipe manufacturer at the location of manufacture of the pipe, or by a qualified applicator selected and inspected by the pipe manufacturer to do the lining. In the latter case, the applicator may do the coal tar epoxy lining at his place of business and shall have a five-year history of doing this particular type of lining for ductile iron or steel pipe.

Because of the extremely rough profile of ductile iron pipe and to insure adequate protection, the amount of material required to achieve the desired film thickness shall be calculated and that amount shall be applied to the surface.

The Contractor shall be solely responsible for both the quality of the pipe and the quality of the lining.

2. Application: All surface areas which will be exposed to sewer liquids and/or gases shall be cleaned so as to remove all deleterious materials. After cleaning, the lining compound shall be applied to all surface areas which will be exposed to the sewer liquids and/or gases. The lining compound shall be applied so as to obtain a continuous and relatively uniform and smooth integral lining. The lining applied to the pipe barrel shall be applied in

three (3) or more coats. The first coat shall consist of (20 mils wet) 16 mils minimum dry film thickness and the finish coats shall be applied to yield a total minimum dry film thickness of 40 mils and nominal thickness of 45 mils for the pipe barrel system.

The lining in the bell area may transition from a 40 mil minimum thickness at the edge of the barrel area to a 10 mil minimum thickness at the edge of the gasket socket. The 10 mil lining shall extend into the gasket socket area to a point where the gasket would overlap the lining when it is compressed due to pipe assembly during construction. The 10 mil lining shall also continue from inside the barrel area, around the spigot end of the pipe and along the outside of the pipe to a point where the center of the gasket of the next pipe section would contact the edge of the lining on the spigot end of the previous pipe section. This is a minimum requirement.

3. Testing: Lining material must pass the following immersion tests (35 mil minimum dry film thickness) without disintegration, blistering, or cracking:

<u>Test</u>	<u>Temperature</u>	<u>Duration (hours)</u>	
		<u>Polyethylene</u>	<u>Coal Tar Epoxy</u>
10% H ₂ SO ₄	70°F	432	2,160
36% HCl	70°F	720	432
3% H ₂ SO ₄	112°F	—	384
25% NaOH	112°F	—	1,560

Each piece of pipe shall be tested and shall have an absence of holidays when tested by a suitable holiday detector. In all cases, the barrel area of the pipe shall be tested using both a voltage of 7500 volts and a dry conductive probe.

Where coal tar epoxy is used in the bell area or on the exterior of the spigot end, that area shall be tested using both a voltage of 67.5 volts and a wet sponge.

The pipe manufacturer shall issue a certification that states that the lining meets the Specifications. The certification shall state specifically the following items:

- a. All ductile iron pipe and fittings have coal tar epoxy interior lining of 40 mils (35 mils minimum) in the barrel area applied in three coats, 10 mils minimum in the bell area and 10 mils minimum on the exterior of the spigot end.
- b. Each piece of pipe and each fitting have been checked for holidays utilizing a testing voltage of 7500 volts with a dry conductive probe in the barrel area and a testing voltage of 67 1/2 volts with a wet sponge in both the bell area and the exterior of the spigot end, and no holidays were found.

- c. The coal tar epoxy lining shall extend from the bottom of the gasket socket in the bell to a point on the exterior of the spigot end of the pipe where the next pipe gasket would overlap the lining.
- d. All coal tar epoxy used meets the current Specifications.

The use of this caulking is only a substitute for certifications dealing with holidays and lining thickness in the bell area and the exterior spigot end. All other certification requirements must be complied with. It should also be noted that the Engineer may require the use of neoprene caulking during construction of all DIP when deemed appropriate. When pipe is supplied that cannot meet the certification requirements for holiday testing and minimum lining thickness in the bell area or on the exterior of the spigot end, neoprene caulking will be required when the pieces of pipe are assembled during construction.

This caulking must be applied in sufficient quantity and at the proper location such that when the spigot end of the pipe is inserted into the bell end of another pipe, an impermeable seal is developed between the spigot end of one pipe section and the barrel to bell transition point of the other pipe section.

- 4. Repairs: Repair of the damage sections of the coal tar epoxy lining shall be in accordance with the lining manufacturer's recommendations or as specified above so that the repaired area is equal to the undamaged lined area in all respects. All damaged lined areas and holidays shall be repaired immediately.

There will be no additional payment for repair of DIP.

If the contractor makes a field cut of coal tar epoxy lined pipe, he shall comply with the recommendations of the pipe manufacturer in applying a coal tar epoxy coating to the pipe end and in allowing proper drying time before pipe assembly. In all cases, as a minimum, a 10 mil coating of coal tar epoxy shall be applied to the pipe end and shall overlap the coal tar epoxy lining by four inches and extend around the end of the pipe and along the outside of the pipe a minimum of ten inches. The coating shall be allowed to dry before assembly. Lined surfaces shall be permitted as long a drying time as practicable, in any event, until the finished coating has dried at least 5 days at 70 degrees F. In addition, the overlapped surface of the coal tar epoxy lining shall be roughed up to produce a 3 to 5 mil profile over the entire surface. The end result of this process is to secure proper adhesion for successive layers of coal tar epoxy.

Holiday testing may be required by the Engineer after pipe assembly when deemed appropriate. The testing and repair requirements shall follow the procedures called for in these specifications.

- D. Measurement And Payment: Measurement of the siphon pipe for Bid Item 615-4 will be made along the spring line of the center 14" pipe from the inside wall of the siphon inlet to the inside wall of the outlet structure. The measurement of the center pipe will be the basis of payment for the 3 barrel siphon. (The 3 pipes will be paid for as one unit.)

Payment for the 3 barrel siphon which consists of 14, 16 and 16-inch ductile iron sewer will be made at the unit price bid per linear foot and shall be full compensation for furnishing and installing new pipe and fittings, couplings and all joint materials, complete-in-place, as specified, including excavating, backfilling, bedding, compacting, sheeting and bracing, testing, concrete encasement and all incidental work not specifically covered in other pay items.

SP-F13 SECTION 615.3 - PIPE BULKHEADS: The Contractor shall, at the close of each day's work and at other such times when pipe is not being laid, CLOSE the end of the pipe with a temporary stopper. The cost for temporary stoppers shall be incidental to the project.

SP-F14 SECTION 615.10 - LEAKAGE TEST: All costs for testing shall be incidental to the project.

- A. Rubber Gasket RCP Pipe: No leakage test will be required for RGRCP sewer pipe. The liner plate shall be visually inspected and the liner plate and welds shall be tested in accordance with Section 741.2.5 of MAG.

The Contractor will be required to use a feeler gauge (supplied by the pipe manufacturer) on each pipe joint to ensure that the rubber gasket has not been damaged or unseated. All damaged rubber gaskets shall be removed and replaced with new rubber gaskets. The Engineer will check the joints with the same feeler gauge used by the Contractor prior to the joints being mortared at his discretion. Any necessary repairs or corrections shall be made by the Contractor at no additional cost to the City.

Exception - A water leakage test done in accordance with MAG will be required on each pipe joint connecting to a structure.

- B. VCP & DIP: Low pressure air testing, as specified in MAG Section 615.10, will be required. The DIP siphon pipe shall be tested as specified in MAG Section 615.10, however, the test pressure will be 50 psi.

SP-F15 CUT AND PLUG SEWER AND WATER SERVICES: Cutting and plugging existing sewer services, cutting and plugging existing water services, removal of water meter boxes and filling and compacting meter box holes shall be included with the unit price bid of water and sewer mains. Water meter boxes shall be salvaged and stockpiled for pickup by City of Phoenix forces. Contractor shall make every attempt to locate water service corporation stop and shall turn off valve, to the satisfaction of the Engineer.

V

Payment will be for each pair of water and sewer service cut and plugged. No payment will be made for cutting and plugging sewer services to be connected to the new sewer or new manholes.

SP-F16 8-INCH PVC AIR JUMPER LINE: All PVC pipe shall conform to MAG Section 745. 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.

- A. 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.
- B. Trenching, bedding, and backfilling of P.V.C. pipe shall be in accordance with Section 601 of the Standard Specification 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 for Bid Item 615-3, measured as provided above, will be paid for at the contract unit price complete-in-place. Furnishing and placing bedding material, fittings, collars, bands, or couplings joining the various sections of pipe will be included in the unit price.

SP-F17 SECTION 625 - MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS: Sanitary sewer manholes shall conform in their entirety to Section 625 of the MAG Standard Specifications and MAG Details 420 and 424 except as modified by COP Supplements.

Manhole Construction: Manholes consisting of special manhole and manhole structures and manhole shafts, frames and covers shall be constructed at the locations called for on the plans.

- A. **Manhole Structure and Shaft:** Manhole bases, shafts, frames and covers shall be constructed as detailed on the plans and on MAG Details 420 and 424. Material and construction methods shall conform to MAG Section 625.
- B. **Lining of Manholes:** Manhole shafts located on the 30" mainline sewer pipe shall be lined on the inside with P.V.C. liner plate per MAG 741 and as shown on the drawings. The lining shall extend fully around the interior circumference from the bottom of the manhole shaft up through the cone excluding the adjustment rings. All joints in the lining shall be covered with a weld strip. The lining shall also conform to the details on the plans.

- C. Measurement and Payment: Bid Items 625-1 and 625-2 will be measured and paid for at the unit price bid each for 5' diameter and 4' diameter manholes complete. Measurement and payment for FVC lining for Item 625-3 shall be for each manhole lined.

SP-F18 SPECIAL CONCRETE STRUCTURES: The siphon inlet and outlet structures and Manhole Structures for the 30-inch sewer at MH1, MH2 and MH3 shall be constructed in conformity with the plans and Subsection 625 of the MAG Standard Specifications and the following Special Provisions.

Submittals by Contractor: Before placing any concrete on this project, the Contractor shall submit the following to the Engineer for review.

- A. Gradation tests of proposed aggregates.
- B. Concrete mix design including compressive strengths of test cylinders.

The cost of preparing the mix designs and conducting tests of proposed materials shall be incidental to the contract and the Contractor will not receive additional compensation.

The Contractor shall submit to the Engineer certificates from the supplier that the Portland cement used on this project complies with the requirements of these specifications. Portland cement mill tests showing the percentages of compounds present in the cement used on this project shall be submitted to the Engineer.

The Contractor shall inform the Engineer at least 24 hours before placing concrete so that he may inspect the forms, reinforcing steel, foundation, etc.

General Requirements: The following shall apply to each of the foregoing special structures:

- A. Structural excavation and backfill shall conform to the requirements of MAG 206, except that structural backfill shall be Type III as specified in Table 601-2. Compaction of backfill around and over the structure shall be by hand-operated equipment only. No operator-mounted equipment shall be used. Jetting of backfill within 10 feet of the structure will not be permitted.
- B. The site work for each special structure shall include the temporary support or relocation of utilities which are disturbed as 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 sub-base 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. Except where noted otherwise, all structural concrete shall be cast-in-place with Class 'A' reinforced concrete meeting the requirements of MAG Section 725. Cement shall be Type II, low alkali, or Portland Pozzolan Cement.
2. Placement, curing, and finishing of concrete shall conform to the requirements of MAG Section 505. All surfaces shall receive a Class I finish.
3. Concrete Additions: Fly ash may be added to the concrete mix per MAG Specifications and as approved by City of Phoenix Materials Testing Section.
4. Bearing Pads: Neoprene rubber, ozone-resistant, Shore A hardness to 30 +- 5. These are normally used on a flat bearing surface as top slab to wall. Engineer's detail shows a key in this area.

Concrete curing materials shall conform to the requirements of MAG Section 726.

Reinforcing steel shall be deformed intermediate grade 60 billet steel, in accordance with MAG Section 727. All welding and inspection of reinforcing steel shall be done in accordance with the requirements of the American Welding Society (AWS), Structural Welding Code - Reinforcing Steel, AWS D1.4.

5. Joint Sealant: One component, polyurethane base sealant, as manufactured by Grove International, Inc. (Mono-Caulk 100) or equal.
6. Epoxy Grout: Pourable, nonshrink, 5,500 psi minimum compressive strength at 24 hours, as manufactured by Master Builders, Inc., or equal.
7. Bituminous Mastic: MAG Section 729.2.
8. Concrete Bonding Agent: Epoxy adhesive, as manufactured by Everbond, Dural bond, or equal.
9. Waterstops shall be PVC, dumbbell type, 3/8" thickness. Waterstops shall be made continuously with all splicing performed in accordance with the manufacturer's recommendations. Waterstops shall be Grace Servicized/Dura-Joint, or equal, and shall be installed in accordance with the details on the plans.

Locations of waterstops shall be as noted in these special provisions and as noted on the plans for the individual structures affected.

10. 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 Conpressive No. 1 LPL, Hunts Process HB-100 or 151, or equal.
11. Bond breaker for concrete form surfaces shall be white pigmented curing compound, conforming to AASHTO M-148, Type 1.
12. 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 anchor bolts shall be five-star, nonmetallic, nonshrink grout, such as PORROK, Hallenite Manufacturing Company, Burke Stone, Burke Concrete Accessories, Inc., or equal.
13. 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.
14. 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.

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

- E. The access hatches at the siphon inlet and outlet chambers shall be BILCO Company Aluminum Type JD, with base 4' x 6' square opening, or an equivalent. The access door at the siphon inlet and outlet chambers shall be flush mounted and capable of sustaining an H-20 loading.

Access shafts to the Manhole Structures for MH1, 2 and 3 shall be according to MAG Detail 420 and 424.

Material and construction methods shall conform to MAG Section 625.

F. Painting and Coating:

1. Finish coats of all iron and steel products above ground shall be a field-applied, two-coat high gloss epoxy system, with a minimum total dry film thickness of 8 mils. Color shall be as selected by the Owner.

2. Exposed aluminum surfaces not in contact with other materials shall be left uncoated. Any painting or coating material applied to exposed surfaces which are not required to be painted or coated shall be thoroughly cleaned after installation and restored to its natural uncoated condition.
 3. All stainless steel items that contact reinforcing steel shall be insulated with 3 wraps of 10 mil P.V.C. tape in the area adjacent to the reinforcing steel.
- G. Maintenance ladders shall be fiberglass and 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.

Fiberglass Ladder: The fiberglass ladder shall meet the following design requirements:

1. Design shall be as specified under the OSHA sub-section 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 or 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 shall meet the following requirements:

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 frame spread of 25 (ASTM E-84)
 - b) Color: yellow throughout

c) Mechanical properties (minimum):

Ultimate tensile strength	30,000 psi
Ultimate compressive strength	30,000 psi
Ultimate shear	5,500 psi
Modulus of elasticity	2.5×10^6
Barcol Hardness	50

2. Side rails shall have a polyurethane coating.

Workmanship shall meet the following requirement:

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.

Safety Post: The Contractor shall furnish one Bilco Model 2 LadderUP safety post or approved equal and install the safety post on the existing ladder in the dry well. The safety post shall be manufactured of high strength steel with telescoping tubular section that locks automatically when fully extended. Upward and downward movement shall be controlled by a spring balancing mechanism. The entire devices shall have a corrosion resistant finish. The unit shall be completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's instructions.

H. Where shown on the Plans, furnish and install slip-resistant fiberglass grating of the size and material type shown, in accordance with applicable Plan details and the following requirements:

1. Slip-resistant fiberglass grating shall be constructed of straight parallel bearing I-bars composed of a glass fiber and thermosetting resin composite with a black grit pressure impregnated surface for skid resistance. Grating shall sustain a maximum deflection of no more than 1/60 of the span with a uniform distributed load of 250 pounds per square foot.
2. Fiberglass grating shall be secured in place with stainless steel saddle clips at 12 inches on center at each end. The fiberglass grating shall be as fabricated by Duradek, or approved equal.
3. Any additional supports required to meet the above deflection requirements shall be furnished and installed as a part of the grating works, at no additional cost to the Owner. Supports shall be made of F.R.P. structural shapes manufactured by the pultrusion process with materials and fabrication conforming to National Bureau of Standards ES 15-69, and shall be attached to the walls with stainless steel anchors.

4. The grating manufacturer shall submit detailed calculations verifying that the proposed fiberglass grating system conforms to the deflection criteria as listed above.

- I. Slide gates, frames and guides shall consist of fiberglass reinforced plastic (FRP) slide gates as manufactured by Plasti-Fab, Inc., P.O. Box 100, Tualatin, Oregon 97062 (503/692-5460) and as detailed on the construction drawings. The slide gate handle shall be bolted to the gate with at least two stainless steel bolts.
- J. Where required to complete the installation of each of the Special Structures, furnish and install any other miscellaneous metal items as required, such as fasteners, supports, anchors, bolts and nuts, etc.

Miscellaneous metal items shall generally conform to the requirements shown on the plans and details. Except where specifically noted otherwise, the following shall apply.

- a. Clamps, supports, and straps shall be of stainless steel, Type 316.
 - b. Fasteners, anchor bolts, nuts, and expansion anchors shall be stainless steel, Type 316.
 - c. Metal parts in direct contact with the PVC lining material shall be installed with a neoprene washer or gasket between the metal and the PVC lining.
- K. All open excavations for construction of the structures shall be securely and completely fenced during non working hours. The excavations shall be barricaded at all times, in accordance with the Maricopa County Highway Department Barricade Manual.
 - L. The Contractor shall furnish and install four staff gauges at the locations shown in the drawings. Three gauges shall be installed in the inlet chamber and one in the outlet chamber. The gauges shall be constructed of a 2" rigid non-corrosive material extending from the 3-inches below the spring line to the top of the bench wall. The staff gauge shall have markings as shown on the drawings.

The gauges in the inlet and outlet chamber shall be set on the same datum.

The strips shall be anchored after the formwork is completed and the chambers have been finished and cleaned. The staff gauge shall be mounted to the mortar wall with 1-1/2" stainless steel self expanding anchor bolts. The bolts shall be spaced every 6-inches.

Measurement and Payment: Siphon Outlet Item 625-4, Siphon Inlet Item 625-5 and Manhole Structures Item 625-6 shall be measured and paid for at the unit price bid each. Payment shall include all items covered under SP-F18.

SP-F19 SANITARY SEWER PLUGS AND MANHOLE ABANDONMENT: The brick work and mortar for Bid Item 625-7, Sanitary Sewer Pipe Plugs and Bid Item 625-8, Fill and Abandon Manhole and plug pipe, shall be constructed in accordance with Section 625 of the MAG Standard Specifications and Detail 427.

Construction of Item 625-7, Fill and Abandon Manhole and Plug Pipe, shall be undertaken after the new sanitary sewer siphon and connector pipes have been placed into service and accepted by the Engineer. Prior to installation of any plugs, filling in, removing, or abandoning any manholes, the abandoned sewer lines will be dewatered and aerated by the Contractor as will not cause damage to public property nor constitute any nuisance or menace to the public. The Contractor shall plug all pipes entering and exiting the manhole, remove and salvage the frame and covers, fill and compact all manholes with aggregate base up to the frame and compact base to 95% density.

The aggregate base used shall comply with Table 702 in the MAG Standard Specifications.

The surface replacement for the manholes to be abandoned in Dunlap Avenue and 7th Avenue shall be Type A, 12" thick, as shown in Detail 200 of the MAG Uniform Standard Details.

The surface replacement for all other manholes to be abandoned along the Arizona Canal and 9th Avenue, shall be Type F, as shown in Detail 200 of the MAG Uniform Standard Details.

Removed frame and covers shall become the property of the City of Phoenix, and the Contractor shall load, haul, and stockpile the frame and covers, as directed, at the City of Phoenix Maintenance Yard, 2301 W. Durango Avenue.

Measurement and payment will be on a unit basis for each manhole filled and will include surface replacement, salvaging of frames and covers, delivery to the City of Phoenix Maintenance Yard, and plugging pipes.

SP-G SUPPLEMENTS TO PART 701 - MATERIALS

SP-G1 SECTION 741: The following shall be included as part of Sub-section 741.

SP-G2 STRUCTURE LINER: Liner plate material for interior faces of the siphon inlet and outlet chambers 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:

- A. Application To Cast-In-Place Concrete Structures: 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.

Bell rings for RCP connections at special structures shall be furnished and installed in accordance with the Plans. Bell rings shall be fabricated as required by the pipe manufacturer, using welded steel plates cut and shaped to accept the pipe manufacturer's standard spigot.

Bell rings shall be cast-in-place in the concrete walls, in accordance with applicable Plan Details.

B. Joints in Liner Plate for Cast-In-Place Concrete Structures:

1. Plates: 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".

2. Welding: All welding shall be in strict conformance with liner plate manufacturer's specifications.

SP-G3 SHOP DRAWINGS: Prior to the manufacture and/or installation of any items in the special structures noted, the Contractor shall submit five (5) 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 project 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.

- A. 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.
- B. 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.

SP-G4 SANITARY SEWER PLUGS: The brick work and mortar for Sanitary Sewer Pipe Plugs, shall be constructed in accordance with Section 625 of the MAG Standard Specifications.

Filling and Abandonment of Manhole and shall include plugging of pipe and shall be undertaken after the new sanitary sewer siphon and connector pipes have been placed into service and accepted by the Engineer. Prior to installation of any plugs, filling in, removing, or abandoning any manholes, the abandoned sewer lines shall be dewatered and aerated by the Contractor in a manner that will not cause damage to public property nor constitute any nuisance or menace to the public. The Contractor shall plug all pipes entering the existing manhole per MAG Detail 427, remove and salvage the ring, frame and cover, and manhole shaft through the cone section, fill and compact all manholes with aggregate base coarse up to the surface replacement to 95% density.

The aggregate base used shall comply with Table 702 in the MAG Standard Specifications.

The surface replacement for the manholes to be abandoned in Dunlap and 7th Avenue which are in pavement shall be Type C, 12" thick, as shown in Detail 200 of the MAG Uniform Standard Details.

The surface replacement for remaining manholes to be abandoned along the Arizona Canal and South of Dunlap Avenue shall be Type F, as shown in Detail 200 of the MAG Uniform Standard Details.

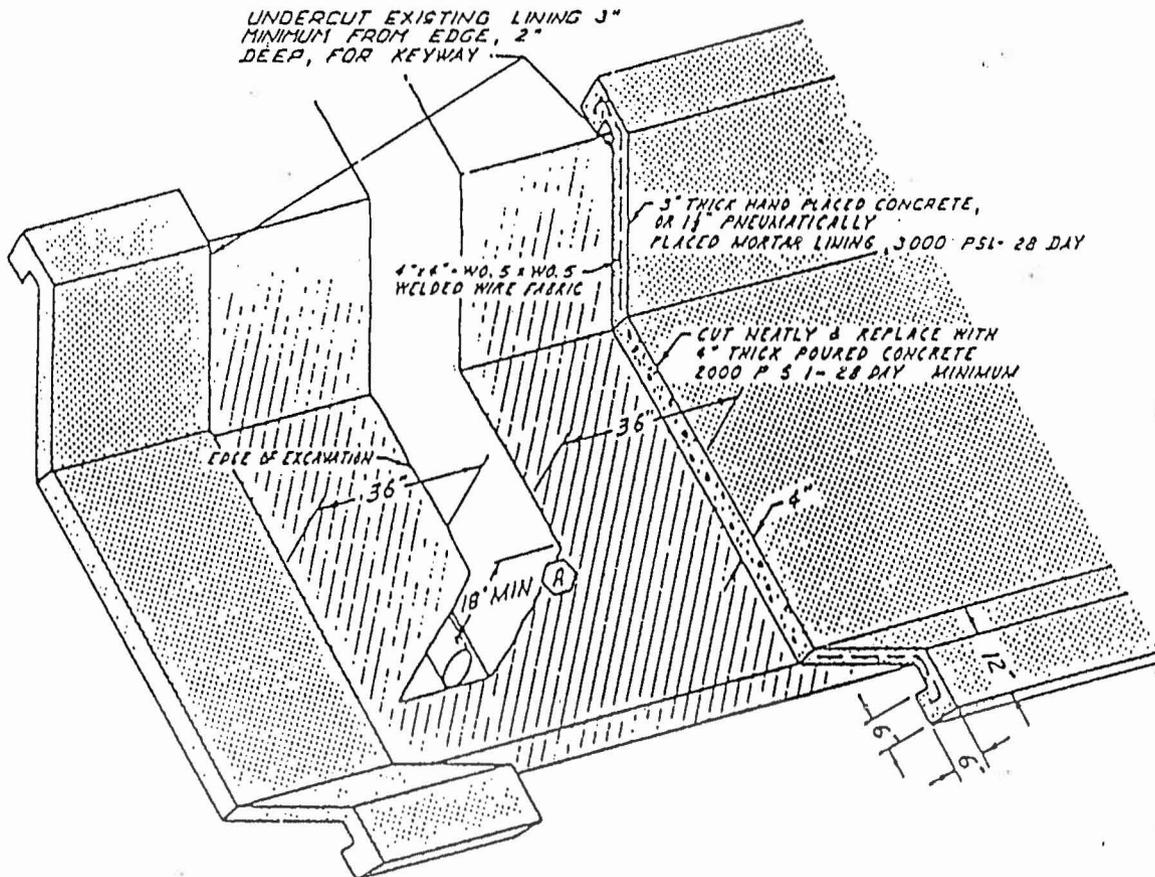
Removed frame and covers shall become the property of the City of Phoenix, and the Contractor shall load, haul, and stockpile the frame and covers, as directed, at the City of Phoenix Maintenance Yard, 2301 W. Durango Avenue.

Measurement and payment will be on a unit basis for each manhole filled and will include surface replacement, salvaging of frames and covers, delivery to the City, and plugging pipes.

APPENDIX A

Salt River Valley Water Users Association
Lined Canal Undercrossing and Replacement Detail

CONSTRUCTION SPECIAL PROVISIONS
Contract No. FCD 87-27



SPECIFICATIONS FOR LINED CANAL UNDERCROSSINGS

1. LINED BANKS TO BE NEATLY CUT AND REMOVED 36" (EACH SIDE) FROM EDGE OF EXCAVATION AND REPLACED WITH A MINIMUM 3" THICK HAND PLACED CONCRETE OR 1-1/2" PNEUMATICALLY PLACED MORTAR LINING, APPLIED OVER 4"x4"-W0.5xW0.5 WELDED WIRE FABRIC.
2. LINED FLOOR TO BE NEATLY CUT AND REMOVED 36" (EACH SIDE) FROM EDGE OF EXCAVATION AND REPLACED WITH 4" THICK 2000 P.S.I. (28 DAY) POURED CONCRETE.
3. A WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO ALL NEWLY PLACED CONCRETE.
4. BACKFILL TO BE NATIVE MATERIAL COMPACTED IN LAYERS TO A MINIMUM OF 90% PROCTOR DENSITY. WHEN NATIVE MATERIAL IS PREDOMINANTLY OF NON-COHESIVE, GRANULAR CONSISTENCY, IT SHALL BE REPLACED WITH A SUITABLE MATERIAL APPROVED BY THE ASSOCIATION INSPECTOR.
5. CANAL ROADWAY SURFACES TO BE RESTORED TO THEIR ORIGINAL CONDITION.
6. NO MANHOLES, RISERS, OR OTHER ABOVE-GROUND FACILITIES TO BE PLACED IN ANY PORTION OF CANAL RIGHT-OF-WAY.
7. TOP OF INSTALLATION IN ANY PORTION OF CANAL RIGHT-OF-WAY TO BE A MINIMUM OF 36 INCHES BELOW GROUND SURFACE.
8. DIRT AND ANY DEBRIS PLACED IN CANAL FOR ANY REASON TO BE COMPLETELY REMOVED UPON COMPLETION OF CROSSING.

(A) MINIMUM OF 18" TO TOP OF PIPE OR TOP OF CONCRETE ENCASEMENT.

NOTE:

PROCTOR DENSITIES TO BE DETERMINED IN ACCORDANCE WITH ASTM D. 698.

REVISION	BY	DATE	APPROVED	DESCRIPTION
SALT RIVER VALLEY WATER USERS' ASSOCIATION PARADISE, UTAH				
LINED CANAL UNDERCROSSING AND REPLACEMENT DETAILS				
DESIGN	MSV	DATE	86	BY
DRAWN	NOVA	DATE	JUN	JAN 26 94
DATE		6-18-79	B-54-225	Y4

CONSTRUCTION SPECIAL PROVISIONS
Contract No. FCD 87-27

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.

APPENDIX B

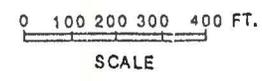
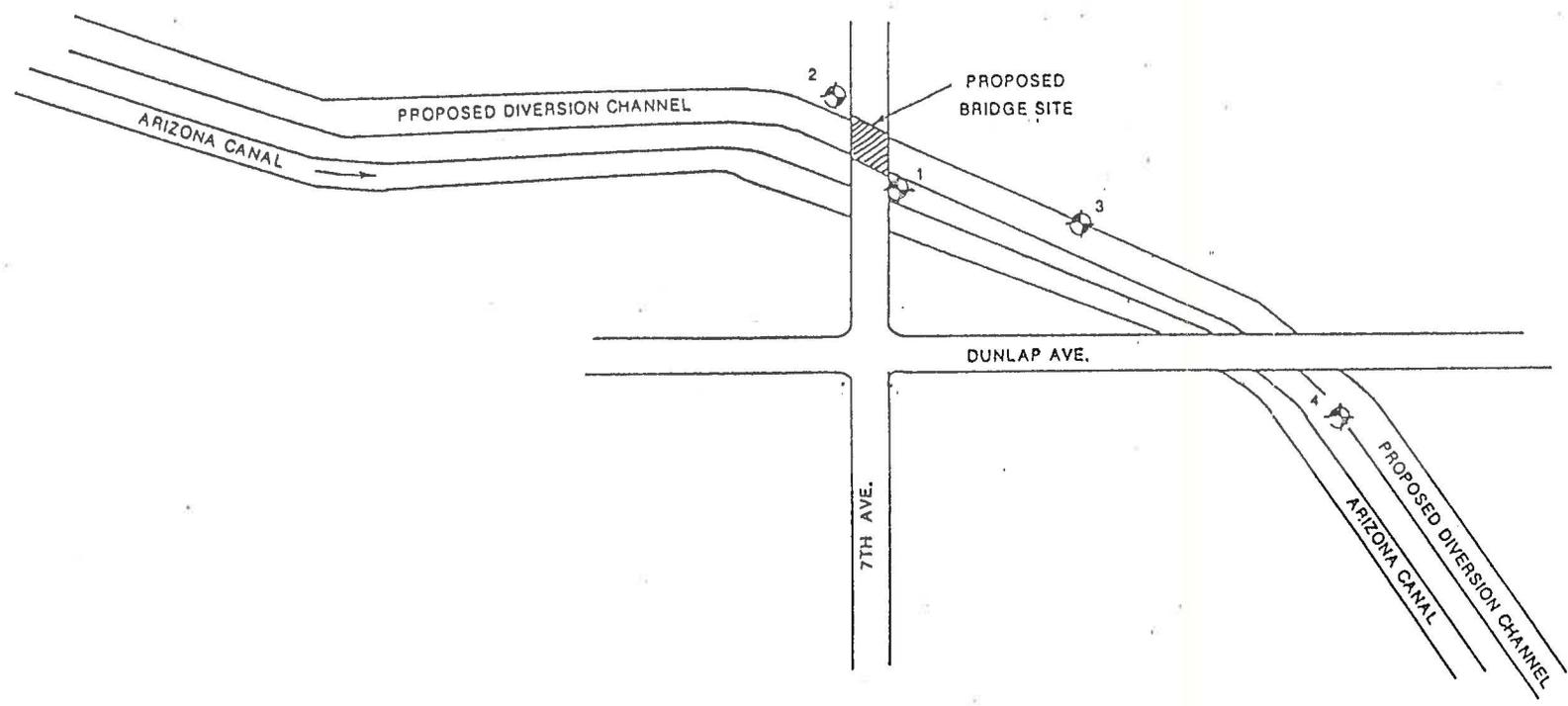
Soils Boring Information

CONSTRUCTION SPECIAL PROVISIONS
Contract No. FCD 87-27

B-1

SITE PLAN

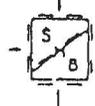
SHOWING LOCATIONS OF TEST BORINGS



Reference Drawing: Hydraulic Plan & Profile
 Sta. 680+00, Sta. 645+00
 U.S. Army Corps of Engineers
 Los, Angeles District

ACDC Canal Bridge
 7th Avenue & Arizona Canal
 Phoenix, Arizona
 SHB Job No. E87-117

CONSTRUCTION SPECIAL PROVISIONS
 Contract No. FCD 87-27



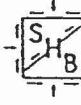
SERGEANT, HAUSKINS & BECKWITH

CONSULTING GEOTECHNICAL ENGINEERS
 PHOENIX • ALBUQUERQUE • SANTA FE • SALT LAKE CITY • EL PASO
 • TUCSON •

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows per foot 140 lb, 30" free-fall drop hammer	Dry Density Lbs. per cu. ft.	Moisture Content Per Cent of Dry Wt.	Unified Soil Classification	RIG TYPE CME-55	
									REMARKS	VISUAL CLASSIFICATION
0			⊗	S	28			SM		FILL
5			⊗	S	32		14	CH	slightly moist very firm	SILTY SAND, some fine grained gravel, poorly graded, weakly lime cemented, low plasticity, light brown note: traces of concrete
10			⊗	S	44					note: filled hole with H ₂ O prior to sampling
15			⊗	S	42		14		slightly moist very firm	SANDY CLAY, some silt, fine to medium grained, weakly lime cemented, medium to high plasticity, light brown
20			⊗	S	45			SC	slightly moist to moist very firm to hard	CLAYEY SAND, some silt, trace of fine grained gravel, predominantly fine to medium grained, weakly lime cemented, low to medium plasticity, light brown
25			⊗	S	53					note: interbedded with CL lenses below 15'
30			⊗	S	57		6	SM-SC	slightly moist hard	SILTY SAND TO CLAYEY SAND, considerable fine grained gravel, poorly graded, angular, weakly lime cemented, low plasticity, light brown
35			⊗	S	91			CL	slightly moist to moist hard	SILTY CLAY, some to considerable fine grained sand, weakly lime cemented, low plasticity, light brown
40			⊗	S	77					note: grading to SC below 40'
45										Stopped auger at 39'6" Stopped sampler at 41'

GROUND WATER		
DEPTH	HOUR	DATE
	none	

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



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Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows per foot 140 lb. 30" free-fall drop hammer	Dry Density Lbs. per cu. ft.	Moisture Content Per Cent of Dry Wt.	Unified Soil Classification	RIG TYPE CME-55	
									REMARKS	VISUAL CLASSIFICATION
0			⊗ S	S	13			ML	slightly moist	SANDY SILT, trace to some clay, fine grained, weakly lime cemented, low plasticity, light brown
5			⊗ S	S	26			CL	moderately firm	
10			⊗ S	S	13		10		slightly moist	SANDY CLAY, considerable silt, predominantly fine to medium grained, weakly lime cemented, low plasticity, light brown
15			⊗ U	U	54			SC SM	moderately firm	CLAYEY SAND, considerable silt, gap graded, weakly lime cemented, low plasticity, light brown
20			⊗ S	S	38		11	CL	slightly moist	SILTY CLAY, trace of fine grained sand, weakly lime cemented, low plasticity, light brown
25			⊗ U	U	73			SC	very firm	
30			⊗ S	S	50				slightly moist	CLAYEY SAND, some silt & fine grained gravel, gap graded, weakly lime cemented, low plasticity, light brown
35			⊗ S	S	55			CL	hard	SANDY CLAY, some to considerable silt, fine to medium grained, weakly lime cemented, low to medium plasticity, light brown
40			⊗ S	S	74					
45										Stopped auger at 39'6" Stopped sampler at 41'

GROUND WATER		
DEPTH	HOUR	DATE
	none	

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



SERGENT, HAUSKINS & BECKWITH

CONSULTING GEOTECHNICAL ENGINEERS
 PHOENIX - TUCSON - ALBUQUERQUE - SANTA FE - SALT LAKE CITY - EL PASO

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows per foot 140 lb., 30" free-fall drop hammer	Dry Density Lbs. per cu. ft.	Moisture Content Per Cent of Dry Wt.	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
									0	
5			S	33				moderately firm		
10			S	75		5	CL	slightly moist very firm to hard	SANDY CLAY, some to considerable silt, fine to medium grained, weakly lime cemented, low plasticity, light brown	
15			S	75			CL	slightly moist hard	SILTY CLAY, trace of fine grained sand, weakly lime cemented, low to medium plasticity, light brown	
20									Stopped auger at 14'6" Stopped sampler at 16'	

GROUND WATER		
DEPTH	HOUR	DATE
	none	

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



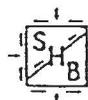
SERGENT, HAUSKINS & BECKWITH

CONSULTING GEOTECHNICAL ENGINEERS
 PHOENIX - TUCSON - ALBUQUERQUE - SANTA FE - SALT LAKE CITY - EL PASO

Depth In Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows per foot 140 lb, 30" free-fall drop hammer	Dry Density Lbs. per cu. ft.	Moisture Content Per Cent of Dry Wt.	Unified Soil Classification	RIG TYPE CME-55	
									BORING TYPE 6 1/2" Hollow Stem Auger	
									SURFACE ELEV. 1235.64'	
									DATUM City of Phoenix	
									REMARKS	VISUAL CLASSIFICATION
0			⊗ S	12				CL-ML	slightly moist to moist	SILTY CLAY, trace of fine grained sand, weakly lime cemented, low plasticity, brown
5			⊗ S	15			12		moderately firm	
								SC	slightly moist	CLAYEY SAND, some silt, trace of fine grained gravel, predominantly fine to medium grained, weakly lime cemented, medium plasticity, brown to light brown
10			⊗ S	26					moderately firm to firm	
15			⊗ S	17			19		moist	SILTY CLAY, trace of fine grained sand, weakly lime cemented, low plasticity, light brown
20			⊗ S	36						note: considerable poorly graded sand in lenses
25			⊗ S	56					slightly moist to moist	SANDY CLAY, some silt, trace of fine grained gravel, poorly graded, weakly lime cemented, low plasticity, light brown
30			⊗ S	32			17	CL	very firm to hard	note: considerable sand below 31', probably grades to SC
35			⊗ S	63						
40										Stopped auger at 34'6" Stopped sampler at 36'

GROUND WATER		
DEPTH	HOUR	DATE
	none	

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



SERGEANT, HAUSKINS & BECKWITH

CONSULTING GEOTECHNICAL ENGINEERS
 PHOENIX • TUCSON • ALBUQUERQUE • SANTA FE • SALT LAKE CITY • EL PASO

CONTRACT FCD 87-27

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 87-27,
Dunlap Ave. 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.

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 87-27
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____.

PRINCIPAL SEAL

AGENCY OF RECORD

BY: _____

AGENCY ADDRESS

SURETY SEAL

BY: _____

CONTRACT NO. FCD 87-27
PERFORMANCE BOND

POWER OF ATTORNEY SEAL

BY: _____

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CERTIFICATE OF INSURANCE

CONTRACT FCD 87-27 PROJECT TITLE Dunlap Avenue Sanitary Sewer Siphon at the Arizona Canal Diversion Channel

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

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE AND ARE IN FORCE AT THIS TIME.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	EXPIRATION DATE	LIMITS OF LIABILITY IN \$1,000	
				MINIMUM	each occurrence
	<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 87-27

FLOOD CONTROL DISTRICT of Maricopa County
(TABULATION OF BIDS)

PROJECT
DUNLAP AVENUE SANITARY SEWER SIPHON at the ACDC

CONTRACT FCD
FCD 87-27

DATE OPENED
Sept. 17, 1987

SHEET
1 of 2

ITEM NO.	DESCRIPTION	PERSON CONSTR.		WESTERN SUN CONST.		LUNDELL CONST.								
		QUANTITY	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT
201-1	9th AVE DEMOLITION + BARRIER REPLAC.	1	L.S. 2100.00	2,100.00	6050.00	6,050.00	3600.00	3,600.00						
334-1	SAWCUT REMOVE + SURFACE REPLACEMENT, TYPE "A" DETAIL 200	260	S.Y. 103.00	26,780.00	44.00	11,440.00	26.30	6,838.00						
336-2	SURFACE REPLACEMENT, BITUMINOUS PATH	13	S.Y. 6.00	78.00	65.00	845.00	26.00	338.00						
336-3	SURFACE REPLACEMENT, S.R.P. CHANNEL LINING	1	L.S. 11200.00	11,200.00	5700.00	5,700.00	11500.00	11,500.00						
340-1	SAWCUT REMOVE + REPLACE CURB + GUTTER, STD DET. 220, TYPE "A", H=6"	45	H.F. 16.50	742.50	30.00	1,350.00	28.20	1,269.00						
350-1	SAWCUT REMOVE + REPLACE SIDEWALK DRIVEWAY + VALLEY GUTTER	329	S.F. 4.75	1,558.00	4.50	1,476.00	71.00	2,492.80						
350-2	TEMPORARY CONCRETE BARRIER CURB	200	L.F. 21.50	4,300.00	10.00	2,000.00	15.50	3,100.00						
350-3	MISCELLANEOUS REMOVAL + OTHER WORK	1	L.S. 3800.00	3,800.00	1000.00	1,000.00	3185.00	3,185.00						
401-1	UNIFORMED, OFFDUTY LAW ENFORCEMENT OFFICER	200	HR. 16.80	3,360.00	19.00	3,800.00	20.00	4,000.00						
401-2	TRAFFIC CONTROL	1	L.S. 3700.00	3,700.00	1200.00	1,200.00	1250.00	1,250.00						
610-1	FURNISH + INSTALL 4" WATERLINE RELOCATION	310	L.F. 26.00	8,060.00	18.50	5,735.00	31.20	9,672.00						
610-2	FURNISH + INSTALL 6" DIP WATERLINE RELOCATION	390	L.F. 28.00	10,920.00	42.50	16,575.00	73.80	28,782.00						
610-3	FURNISH + INSTALL 6" GATE VALVE	4	EA. 300.00	1,200.00	320.00	1,280.00	500.00	2,000.00						
610-4	FURNISH + INSTALL 6" F.H. COMPLETE	2	EA. 1800.00	3,600.00	1000.00	2,000.00	670.00	1,340.00						
610-5	FURNISH + INSTALL 6" WATERLINE for F.H.	30	L.F. 17.50	525.00	18.00	540.00	102.00	3,060.00						
615-1	INSTALL 30" RGRCP SANITARY SEWER	370	L.F. 104.00	38,480.00	144.00	53,280.00	66.00	24,420.00						
615-2	FURNISH + INSTALL 8" VCP SANITARY SEWER	1830	L.F. 23.00	42,090.00	18.75	34,312.50	33.10	60,573.00						
615-3	FURNISH + INSTALL 8" AIR JUMPER LINE	200	L.F. 18.50	3,700.00	15.50	3,100.00	29.40	5,880.00						

FLOOD CONTROL DISTRICT of Maricopa County
(TABULATION OF BIDS)

PROJECT: DUNLAP AVENUE SANITARY SEWER STATION at the ACDC
 CONTRACT FCD: FCD 87-27
 DATE OPENED: SEPT 17, 1987
 SHEET: 2 of 2

ITEM NO.	DESCRIPTION	PERSON CONSTR.				WESTERN SUN CON				LUNDSELL CONSTR.			
		QUANTITY	UNIT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT	UNIT PRICE	\$ AMOUNT
615-4	FURNISH + INSTALL 3-BARREL SIPHON (14", 16" + 16" MECHANICAL JOINT D.I.P. COAL TAR EPOXY LINED)	300	LF	334.00	66,800.00	656.00	131,200.00	551.50	111,300.00				
625-1	4' DIA. SANITARY SEWER MANHOLE STD. DET. 420, 424	12	EA.	1400.00	16,800.00	850.00	10,200.00	1170.00	14,040.00				
625-2	5' DIA. SANITARY SEWER MANHOLE DET. 420 + 424	2	EA.	1900.00	3,800.00	1600.00	3,200.00	1880.00	3,760.00				
625-3	FURNISH + INSTALL P.V.C. LINING for 5' DIA. M.H.	2	EA.	2500.00	5,000.00	1200.00	2,400.00	1320.00	2,640.00				
625-4	FURNISH + INSTALL SIPHON OUTLET STRUCTURE	1	EA.	33600.00	33,600.00	34325.00	34,325.00	29800.00	29,800.00				
625-5	FURNISH + INSTALL SIPHON INLET STRUCTURE	1	EA.	29400.00	29,400.00	38100.00	38,100.00	24500.00	24,500.00				
625-6	MANHOLE STRUCTURES for MH1, MH2, MH3	3	EA.	11550.00	34,650.00	12700.00	38,100.00	9500.00	28,500.00				
625-7	FURNISH + INSTALL SANITARY SEWER PIPE PLUGS STD. DET. 427	7	EA.	100.00	700.00	59.00	350.00	140.00	980.00				
625-8	FILL + ABANDON MANHOLE + PLUG PIPE(S)	13	EA.	400.00	5,200.00	250.00	3,250.00	500.00	7,200.00				
TOTAL					363,243.50		421,958.50		432,894.00				

BID SCHEDULE

PROJECT : Sewerline Relocation from 9th Avenue to Dunlap Avenue
with Inverted Siphon at Dunlap Avenue

Engineer's Estimate
9/2/87

CONTRACT:

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	201-1 9th Avenue Demolition and Barrier Placement	L.S.	1	10,000.00	10,000.00
2	336-1 Sawcut, Remove and Surface Replacement, Type "A"				
3	Detail 200	S.Y.	260	33.00	8,580.00
4	336-2 Surface Replacement, Bituminous Bike Path	S.Y.	13	22.00	286.00
5	336-3 Surface Replacement, S.R.P. Channel Lining	L.S.	1	6,700.00	6,700.00
6	340-1 Sawcut, Remove and Replace Curb & Gutter, Std.				
7	Detail 220, Type "A", H = 6'	L.F.	45	18.00	810.00
8	350-1 Sawcut, Remove, and Replace Sidewalk Driveway				
9	and Valley Gutter	S.F.	328	2.50	820.00
10	350-2 Temporary Concrete Barrier Curb	L.F.	200	20	4,000.00
11	350-3 Miscellaneous Removal and Other Work	L.S.	1	2,200.00	2,200.00
12	401-1 Uniformed, Off Duty Law Enforcement Officer	HR	200	15	3,000.00
13	401-1 Traffic Control	L.S.	1	3,000.00	3,000.00
14	610-1 Furnish and Install 4" Waterline Relocation	L.F.	210	25.00	5,250.00
15	610-2 Furnish and Install 6" DIP Waterline Relocation	L.F.	390	30.00	11,700.00
16	610-3 Furnish and Install 6" Gate Valve	EACH	4	400.00	1,600.00
17	610-4 Furnish and Install 6" F.H. Complete	EACH	2	1,500.00	3,000.00

BID SCHEDULE

PROJECT : Sewerline Relocation from 9th Avenue to Dunlap Avenue
with Inverted Siphon at Dunlap Avenue

CONTRACT:

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 610-5	Furnish and Install 6" Waterline for F.H.	L.F.	30	30.00	900.00
2 615-1	Install 30" RGRCP Sanitary Sewer	L.F.	370	40.00	14,800.00
3 615-2	Furnish and Install 8" VCP Sanitary Sewer	L.F.	1830	45.00	82,350.00
4 615-3	Furnish and Install 8" Air Jumper Line	L.F.	200	15.00	3,000.00
5 615-4	Furnish and Install 3-Barrel Siphon, 14", 16" and				
6	16" Mechanical Joint D.I.P. Coal Tar Epoxy Lined	L.F.	200	400.00	80,000.00
7 625-1	4' Dia. Sanitary Sewer Manhole, Std. Det. 420, 424	EACH	12	2,500.00	30,000.00
8 625-2	5' Dia. Sanitary Sewer Manhole, Det. 420 and 424	EACH	2	3,500.00	7,000.00
9 625-3	Furnish and Install P.V.C. Lining for 5' Dia. M.H.	EACH	2	1,200.00	2,400.00
10 625-4	Furnish and Install Siphon Outlet Structure	EACH	1	35,000.00	35,000.00
11 625-5	Furnish and Install Siphon Inlet Structure	EACH	1	42,000.00	42,000.00
12 625-6	Manhole Structures for MH1, MH2, MH3	EACH	3	5,500.00	16,500.00
13 625-7	Furnish and Install Sanitary Sewer Pipe				
14	Plugs, Std. Det. 427	EACH	7	155.00	1,085.00
15 625-8	Fill and Abandon Manhole and Plug Pipe(s)	EACH	13	525.00	6,825.00
16			TOTAL		382,806.00
17					

TRANSMITTAL
13 SEP 1988

HOWARD NEEDLES TAMMEN & BERGENDOFF

February 10, 1988

Ms. Sharlie Khan
Maricopa County
Flood Control District
3335 West Durango Street
Phoenix, Arizona 85009

RE: Sewerline Relocation from 9th Avenue
to Dunlap Avenue with Diverted Siphon
at Dunlap Avenue
HNTB Project No. 11724
Additional Survey Work

Dear Sharlie:

There is a difference in the stationing of the structures as shown on the Plan and Profile, Sheet 2, of the Plans. Also, the topography as shown on the Plans, did not match the field conditions. This resulted in repositioning MH 6.

Additionally, the coordinates between MH 7 and MH 8 did not match the field control points. Due to these differences, the Contractor's surveyor needed additional time to correctly realign the aforementioned items. The time was monitored by our Firm. We agree with their submittal.

Respectfully submitted,

HOWARD NEEDLES TAMMEN & BERGENDOFF


For John Turner
Project Engineer

JT/JS/cjb/B61

16-18

Architects Engineers Planners

Anchor Centre Two - Suite 400, 2207 East Camelback Road, Phoenix, Arizona 85016, 602 954-7420

Partners James F. Finn PE, Gerard F. Fox PE, Browning Crow PE, Charles T. Hennigan PE, Daniel J. Watkins PE, Daniel J. Spigai PE, John L. Cotton PE, Francis X. Hall PE, Robert S. Coma PE, Donald A. Dupies PE, William Love FAIA, Robert D. Miller PE, James L. Tuttle, Jr. PE, Hugh E. Schall PE, Cary C. Goodman AIA, Gordon H. Slaney, Jr. PE, Harvey K. Hammond, Jr. PE, Stephen G. Goddard PE, John W. Wight, Jr. PE
Associates Daniel J. Appel PE, Robert W. Richards PE, Don R. Ort PE, Frederick H. Sterbenz PE, Robert B. Kollmar PE, Kendall T. Lincoln CPA, Roberts W. Smith PE, Richard D. Beckman PE, Harry D. Bertossa PE, Ralph E. Robison PE, Cecil P. Counts PE, Stanley I. Mast PE, Robert W. Anzia PE, Walter Sharko PE, James O. Russell PE, Ross L. Jensen AIA, Frank T. Lamm PE, Ronald W. Aarons AIA, H. Jerome Butler PE, Blaise M. Carriere PE, Michael P. Ingardia PE, Bernard L. Prince PE, Stephen B. Quinn PE, Saul A. Jacobs PE, James A. Smith, Ronald F. Turner AIA, Ewing H. Miller FAIA, Douglas C. Myhre PE, Carl J. Mellea PE, Daniel F. Becker PE, Richard L. Farnan AIA, Paul L. Jorgensen AIA, Donald P. Keuth PE, Douglas E. Prescott PE
Offices Alexandria, VA, Atlanta, GA, Austin, TX, Baton Rouge, LA, Boston, MA, Charleston, WV, Chicago, IL, Cleveland, OH, Dallas, TX, Denver, CO, Fairfield, NJ, Houston, TX, Indianapolis, IN, Kansas City, MO, Lexington, KY, Lexington, MA, Los Angeles, CA, Miami, FL, Milwaukee, WI, Minneapolis, MN, Nashua, NH, New York, NY, Orlando, FL, Overland Park, KS, Philadelphia, PA, Phoenix, AZ, Raleigh, NC, Seattle, WA, Tampa, FL, Tulsa, OK, Wilmington, DE.



FLOOD CONTROL DISTRICT of Maricopa County

CONTRACT ADJUSTMENT NO. 7
FCD CONTRACT 87-27 Sewerline Relocation, 9th Ave. to Dunlap Ave.

Date February 10, 1988

To: Pierson Construction, Contractor. You are hereby directed to make the herein described changes from the plans and specifications or do the following described work not included in the plans and specifications on the above-mentioned project.

Change requested by: HOWARD NEEDLES TAMMEN & BERGENDOFF

Description of work to be done, estimate of quantities, and prices to be paid: Segregate between additional work at contract price, agreed price and actual cost. Unless otherwise stated, rates for rental of equipment on actual cost work cover only such time as equipment is actually used and no allowance will be made for idle times.

- °(1) Estimate of increases and/or decreases in contract items at contract prices.
- °°(2) Estimate of extra work at agreed price and/or actual cost.

Item	Description	Estimated Quantity	As Built Quantity	Diff. + or -	Unit Price	DIFFERENCE +
1	Structure S1 had to be relocated. The stationing for the structure did not match in the Plan and Profile views. See Exhibit J.			\$182.50	LS	\$182.50
2	The location for the 45° bends at the siphon line had to be relocated. Manhole 6 had to be repositioned. The topography and stationing on the Plans did not match the field locations. See Exhibit J.			\$132.50	LS	\$132.50
3	Restake location of MH 7 and MH 8. Coordinates on Plan did not match with control points in field. See Exhibits K & L.			\$275.00	LS	\$275.00
4	Coordinates on Plans between MH 13 through MH 17 did not match control points in field. See Exhibits K & M.			\$180.00	LS	\$180.00
	Subtotal					\$770.00
	Pierson's 10% overhead & profit					77.00
	Subtotal					\$847.00
	Sales Tax					42.35

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved that we will provide all equipment, furnish all material, except as may otherwise be noted above, and perform all services necessary for the work above specified, and we will accept as full payment therefor the prices shown above.

By reason of this proposed change 0 days extension of time will be allowed.

Contractor Pierson Construction Corporation

By Richard Pierson
TITL

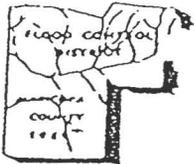
Date 2/17/88

Recommended By [Signature]

Approved By

Date 2-14-88

Date



FLOOD CONTROL DISTRICT of Maricopa County

CONTRACT ADJUSTMENT NO. 7
FCD CONTRACT 87-27 Sewerline Relocation, 9th Avenue to
Dunlap Ave.

Date February 10, 1988

To: Pierson Construction, Contractor. You are hereby directed to make the herein described changes from the plans and specifications or do the following described work not included in the plans and specifications on the above-mentioned project.

Change requested by: HOWARD NEEDLES TAMMEN & BERGENDOFF

Description of work to be done, estimate of quantities, and prices to be paid: Segregate between additional work at contract price, agreed price and actual cost. Unless otherwise stated, rates for rental of equipment on actual cost work cover only such time as equipment is actually used and no allowance will be made for idle times.

- °(1) Estimate of increases and/or decreases in contract items at contract prices.
- °°(2) Estimate of extra work at agreed price and/or actual cost.

Item	Description	Estimated Quantity	As Built Quantity	Diff. + or -	Unit Price	DIFFERENCE +
	Bond					21.39
	Total					\$910.74

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved that we will provide all equipment, furnish all material, except as may otherwise be noted above, and perform all services necessary for the work above specified, and we will accept as full payment therefor the prices shown above.

By reason of this proposed change 0 days extension of time will be allowed.

Contractor Pierson Construction Corporation

By Richard Pierson President
Date 2/17/88

Recommended By [Signature]

Approved By Robert C. Payne, P.E.

Date 2-19-88

Date 14 March 88



BRADY ENGINEERING & LAND SURVEYING CO.

Civil Engineering • Land Surveying
Construction Staking

Dennis H. Brady L.S.
Robert N. Hermon P.E.
C.E. Aulerich L.S.

9 February 1988

Mr. Jerry Saunders
H.N.T.B.
2207 E. Camelback Road
Suite 200
Anchor Centre II
Phoenix, Az 85016

RE: ADDITIONALS TO CONTRACT ON THE 9TH AVENUE SEWER LINE
RELOCATIONS.

Dear Jerry:

As per our conversation of February 9, please find the enclosed work invoices which indicates the above mentioned additions and as listed below:

October 21, 1987

Plan delay due to existing topographic locations being in error near Structure No. 2

2/M	2.5 hrs	@ \$55	\$ 137.50
1/M - Research	1.0 hr	@ \$45	<u>45.00</u>
			182.00

October 23, 1987

Plan delay for lcoation of new 45° bends and relocation of Manhole No. 6 due to topographic error

2/M	2.0 hrs	@ \$55	110.00
1/M - Research	.5 hr	@ 45	<u>22.50</u>
			132.50

Additional Costs to date \$315.00

Breakdown of Contract:

Base Contract	2560.00
Additions 11/1/87	<u>315.00</u>
New Contract Amount	\$ <u>2875.00</u>

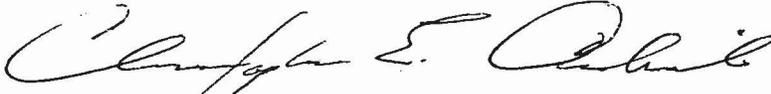
Page 2
Mr. Jerry Saunders
9 February 1988

As we also discussed, the letter of December 30, 1987, sent to Linda Hopkins is sufficient for the listed extras of December 29 and December 30, 1987. A copy is enclosed.

If you have further questions, please let me know.

Sincerely,

BRADY ENGINEERING & LAND SURVEYING CO.



Christopher E. Aulerich, R.L.S.

CEA:wm

Enc: work invoices
letter Dec. 30, 1987

cc: Linda Hopkins
TIFFANY CONSTRUCTION
1850 West Broadway Road
Phoenix, Az 85005

Exhibit "K"



BRADY ENGINEERING & LAND SURVEYING CO.

Civil Engineering • Land Surveying
Construction Staking

Dennis H. Brady L.S.
Robert N. Hermon P.E.
C.E. Aulerich L.S.

30 December 1987

Ms. Linda Hopkins
TIFFANY CONSTRUCTION CO., INC.
1850 West Broadway Road
Phoenix, Arizona 85005

RE: ADDITIONS TO CONTRACT ON THE 9TH AVENUE SEWER LINE
RELOCATIONS:

Dear Linda:

Enclosed please find a statement for the current work on the
above mentioned project which includes the following EXTRAS
TO CONTRACT:

12/29/87	Restaking Manholes 2/M 5.0 hrs	275.00 ✓
12/30/87	Calculations (EXTRA) 1/M 4.0 hrs	<u>180.00</u> ✓
		455.00
Breakdown of Contract - Base Contract		2560.00
	Additions - 11/30/87	315.00 ✓
	Additions - 12/30/87	<u>455.00</u>
	New Contract Amount	<u><u>3330.00</u></u>

If you have any questions, please let me know.

Sincerely,

BRADY ENGINEERING & LAND SURVEYING CO.

Christopher E. Aulerich, R.L.S.

CEA:wm

Enc: statement
work invoices

WORK INVOICE

Move MH #6



**BRADY ENGINEERING
AND
LAND SURVEYING CO.**

1042 EAST GUADALUPE RD., SUITE 100
TEMPE, ARIZONA 85283
PHONE 839-4000

Exhibit "L"

CLIENT: *TIFFANY CONST.*

JOB SITE: *DONLAP E 9TH AVE*

INVOICE DATE	<i>DEC 29, 1987</i>
OUR JOB NO.	<i>B87-10-11</i>
YOUR P.O. NO.	
PARTY CHIEF	<i>KETH</i>

CREW	DESCRIPTION	HOURS	AMOUNT
<i>2</i>	<i>STAKE & GRADE 8' S/S MH #7 → M.H. #8 Restake - Extra. MH #7 - Staked 4 times.</i>	<i>5⁰⁰</i>	<i>275.¹⁰</i>

AUTHORIZED SIGNATURE _____

Exhibit "M"

WORK INVOICE



BRADY ENGINEERING
AND
LAND SURVEYING CO.

1042 EAST GUADALUPE RD., SUITE 100
TEMPE, ARIZONA 85283
PHONE 839-4000

CLIENT: *Tiffany Lawt.*
JOB SITE: *Quincy, 9th Ave -*

INVOICE DATE	<i>12-30-87</i>
OUR JOB NO.	<i>387-10-11</i>
YOUR P.O. NO.	
PARTY CHIEF	<i>Office -</i>

CREW	DESCRIPTION	HOURS	AMOUNT
<i>1/man</i>	<i>Calculations (Extra) 12/18 - 12/21</i>	<i>4⁰⁰</i>	<i>180.⁰⁰</i>
<i>1/man</i>	<i>Record-Supervision</i>	<i>1.5</i>	<i>67.⁵⁰</i>
			<i>247.50</i>

AUTHORIZED SIGNATURE _____

To Contract Documents

ENTITLED: Sewerline Relocation from 9th Avenue to Dunlap Avenue with Inverted Siphon at Dunlap Avenue

OWNER: Flood Control District of Maricopa County

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

1. Construction Special Provisions, Page 25 of 28, insert the following paragraph after Section SP-F19 and before SP-G.

SP-F20 9th Avenue Sewer Service Connection. The Contractor shall field locate the sewer service connection on 9th Avenue shown on the attached Exhibit A and determine the size of the service connection and invert elevation into the existing sewer. The Contractor shall provide survey elevations to the Engineer to ensure the service connection can be made by gravity. Upon determining the size of the connection, the Contractor shall make arrangements to furnish and install in accordance with MAG Detail 440, Type A, the sewer connection along the alignment shown in Exhibit A. Payment for this item shall be included in the unit price bid of the 8-inch VCP Sanitary Sewer, Bid Item 615-2.

2. Construction Special Provisions, Page 6 of 28, insert the following sentence at the end of SP-11, Section 107.2 - Permits: "The Contractor shall obtain all necessary permits from the City of Phoenix. No fee will be charged for permits from the City of Phoenix."

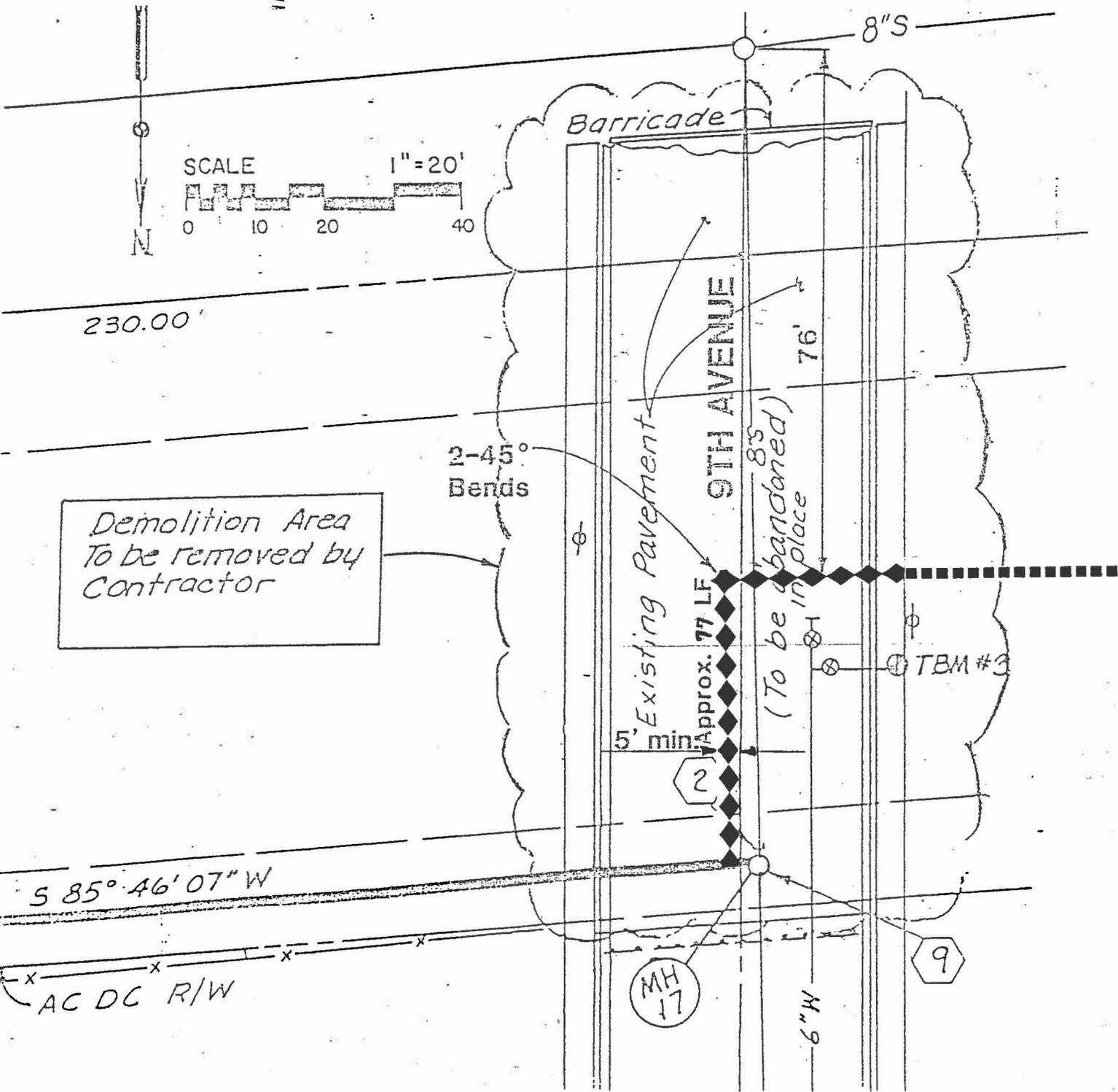


EXHIBIT A

LEGEND

- Existing Service
- Service Extension
- New 8' Sewer

2:10 9/11

HNTB

HOWARD NEEDLES TAMMEN & BERGENDOFF
Anchor Centre Two - Suite 400, 2207 East Camelback Road
Phoenix, Arizona 85016, 602 954-7420

LETTER OF TRANSMITTAL

Job No. 11724-21-03
Date 8-31-87

TO Mr. Ed Ralosh
Flood Control District
3335 W. Durango
Phoenix, AZ 85009

RE 7th Ave Sewer Relocation

WE ARE FORWARDING TO YOU:

- Estimates
- Proposals
- Reports
- Plans
- Prints
- Under separate cover via: _____
- Shop Drawings
- Samples
- Specifications
- Copy of letter
- Change order
- Addendum, Bid Schedule

NO. OF COPIES	DRAWING NO.	LAST DATED	CODE	DESCRIPTION
1		8-31-87		Addendum #1
1		8-31-87		BID SCHEDULE

FLOOD CONTROL DISTRICT
RECEIVED
SEP 2 '87

CH ENGR	P & PM
DEP	HYDRO
ADMIN	LMGT
FINANCE	FILE
G & O	
ENGR	

REMARKS

THESE ARE TRANSMITTED

- For approval
- For your use
- As requested
- For review and comment

Mag 440
Type A or B?
start at P to get
adequate fall.

- No exceptions taken (NE)
- Make corrections noted (MCN)
- Amend and resubmit. (AR)

PLEASE NOTE: _____

cc. Gray Wangelin - HNTB
Jerry Arakaki - COP Engineering

HOWARD NEEDLES TAMMEN & BERGENDOFF
Per [Signature]

ADDENDUM #1

SEWERLINE RELOCATION FROM 9TH AVENUE TO DUNLAP AVENUE WITH INVERTED SIPHON AT DUNLAP AVENUE

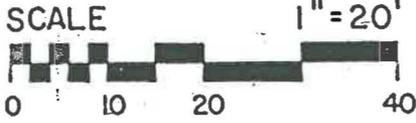
This addendum to the drawings and the specifications is hereby made a part of the Contract Documents, for the above entitled project, to the same extent as though it were originally contained therein.

All bidders are expected to thoroughly examine each item enumerated herein, regardless of its apparent applications and shall be held responsible for furnishing all labor and materials required in the division of work that the items indicate.

SPECIFICATION CHANGES

1. Special Provisions

SP-F20 9th Avenue Sewer Service Connection. The Contractor shall field locate the sewer service connection, on 9th Avenue shown on Exhibit A and determine the size of the service connection and invert elevation into the existing sewer. The Contractor shall provide survey elevations to the Engineer to ensure the service connection can be made by gravity. Upon determining the size of the connection, the Contractor shall make arrangements to furnish and install in accordance with MAG Detail 440, the sewer connection along the alignment shown in Exhibit A. Payment for this item shall be included in the unit price bid of the 8-inch VCP Sanitary Sewer, Bid Item 615-2.



8" S

Barricade

230.00'

9TH AVENUE

76'

2-45° Bends

Demolition Area
To be removed by
Contractor

Existing Pavement
Approx. 50 LF
(To be abandoned)
in place

5' min

TBM #3

S 85° 46' 07" W

AC DC R/W

MH 17

9

6" W

EXHIBIT A

LEGEND

- Existing Service 
- Service Extension 
- New 8' Sewer 



8" S

Barricade

230.00'

9TH AVENUE

76'

2-45° Bends

Demolition Area
To be removed by
Contractor

Existing Pavement
Approx. 50 LF

(To be abandoned)
in place

TBM #3

5 85° 46' 07" W

MH 17

9

AC DC R/W

6" W

EXHIBIT A

LEGEND

- Existing Service
- Service Extension
- New 8' Sewer



SCALE

1" = 20'

0 10 20 40

8" S

Barricade

230.00'

9TH AVENUE

76'

2-45° Bends

Demolition Area
To be removed by
Contractor

Existing Pavement
Approx. 50 LF
(To be abandoned)
in place

5' min.

TBM #3

S 85° 46' 07" W

AC DC R/W

MH 17

6" W

9

EXHIBIT A

LEGEND

Existing Service

Service Extension

New 8' Sewer



EE 500,000

BID SUMMARY & CHECKLIST

Dunlap Ave. Sanitary Sewer

10:00 a.m.

PROJECT: Sipton at the ACDC

CONTRACT FCD: 87-27 DATE: Sept. 17, 1987

ECD Personnel

Earl Kirby
Joy Ketchum

Item	Name Lundell Contr Co., Inc	Person Contr	Western Sum Contractors	Nikko Constructors		
------	-----------------------------------	--------------	----------------------------	-----------------------	--	--

Schedule Complete	✓	✓	✓	✓		
Addenda Noted	✓	✓	✓	✓		
No Exceptions	✓	✓	✓	✓		
Changes Initialed	✓	✓	✓	✓		
Proposal Signed	✓	✓	✓	✓		
License Number						
Bid Security	✓	✓	✓	✓		
No Collusion Affidavit	✓	✓	✓	✓		
1						
2						
3						
TOTAL CONTRACT	432,894 ⁸⁰	363,243 ⁵⁰	421,958 ⁵⁰	472,788 ⁰⁰		

3

1

2

4

ADDENDUM #1

FOR

SEWERLINE RELOCATION FROM 9TH AVENUE TO DUNLAP AVENUE
WITH INVERTED SIPHON AT DUNLAP AVENUE

ARIZONA CANAL DIVERSION CHANNEL

CONTRACT NO. FCD 87-27

AUGUST 31, 1987

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