

CITY OF SCOTTSDALE  
CAPITAL IMPROVEMENTS ENGINEERING

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PROJECT NO. W-7508  
SPECIFICATIONS AND CONTRACT DOCUMENTS  
for  
INDIAN SCHOOL ROAD 45" WATER LINE RELOCATION

MAYOR

William C. Jenkins

COUNCILMEN

Richard Campana  
Herb Drinkwater  
Mrs. Billie Gentry

Charles H. Smith  
Heinz R. Hink, Ph.D.  
Paul Messinger

1974



BROOKS & KELLY  
Consulting Engineers  
3138 East McDowell Road  
Phoenix, Arizona 85008

A680.514

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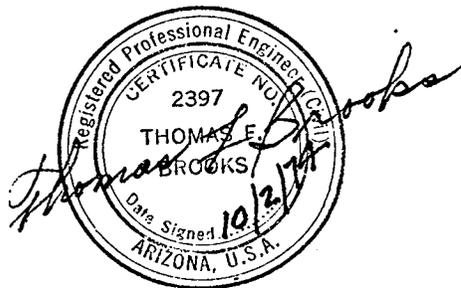
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NOTICE INVITING PROPOSALS OR BIDS

NOTICE IS HEREBY GIVEN that the Council of the City of Scottsdale, Maricopa County, State of Arizona, ordered the construction of Indian School Road 45" Water Line Relocation, Project W-7508, and performing incidental work thereto.

SEALED BIDS WILL BE RECEIVED until 10:00 a.m., November 1 1974, by the City Clerk in the Scottsdale City Hall, 3939 Civic Center Plaza, Scottsdale, Arizona. At this time, the bids will be publicly opened and read aloud for the furnishing all materials, equipment, and labor and performing all the work necessary for the construction.

The City Council reserves the right, as the interest of the owner may require, to reject any and all bids, to waive any informality in bids received, and to accept, increase or reduce the quantities of any or all items of any bid, unless the bidder qualifies such bid by specific limitation, and reserves the right to reject the bid of any person who has been delinquent or unfaithful to any contract with the City of Scottsdale.

Plans, specifications and proposal forms may be obtained from the office of the City Engineer, 3939 Civic Center Plaza, Scottsdale, Arizona, for a sum of Five Dollars (\$5.00). This fee is nonrefundable.

Each bidder shall state his Arizona State Contractor's License Number and Classification as evidence that he is qualified to contract the work as indicated in the Specifications and Plans for the work to be performed.

Pursuant to the statutes of the State of Arizona, the wage rates paid all laborers, workmen and mechanics employed in the executing of the contract shall be in accordance with the rates of the latest "Arizona Prevailing Wage Scale" of the Industrial Commission of Arizona, applicable to the location at which the work is to be performed. Wage rates as determined above shall be considered as minimum rates only.

Each bid shall be made out on the proposal form which is attached to the specifications; shall be accompanied by a bid bond acceptable to the City of Scottsdale for penal sum of not less than ten percent (10%) of the amount of the bid made payable to the order of the City of Scottsdale, Arizona.

Bids shall be marked:

Bid of \_\_\_\_\_, Contractor  
for the construction of Indian School Road 45" Water Line Relocation,  
Project W-7508.

Bids received after the time and date specified above will be returned unopened to the bidder. A bid may be withdrawn prior to the time set for opening of bids. No bid may be withdrawn for a period of thirty (30) days after the date set for receipt of bids.

CITY OF SCOTTSDALE, ARIZONA

By

  
GEORGE IANNELLA

Capital Improvements Engineer

INFORMATION FOR BIDDERS

1. GENERAL:

(a) Plans, Specifications and proposal forms may be obtained from the office of the City Engineer, 3939 Civic Center Plaza, Scottsdale, Arizona, upon payment of \$5.00 per set.

(b) No refunds will be made for the return of plans and/or specifications by prospective bidders.

2. SUBMITTING BIDS:

(a) No bid will be considered unless it is made upon the proposal forms contained in and submitted with this project specification book.

(b) Bids received after the time and date specified in the Notice Inviting Proposals or Bids will be returned unopened to the Bidder.

(c) A bid may be withdrawn prior to the time set for opening of bids. In order for bid to be considered, bidder must hold appropriate license, issued by the Arizona State Registrar of Contractors, enabling him to do the work.

3. BONDS REQUIRED:

(a) The proposal must be accompanied by a bid bond in the amount of ten per cent (10%) of the highest aggregate bid.

(b) Bonds for Payment, and Performance of Contract in the amount of one hundred percent (100%) of the Contract Price will be required at the time of executing the formal contract.

4. EXECUTION OF CONTRACT:

The Contractor shall execute the contract with the City of Scottsdale within five (5) days after receiving a notice that the Contract has been awarded.

5. INTERPRETATION OF QUOTED PRICES:

In case of a difference in written words and figures in a Proposal, the amount stated in written words shall govern.

6. EXAMINATION OF SITE:

Each bidder shall fully inform himself of the conditions relating to the construction and furnishing of labor, materials and equipment for the work by personally examining the site, and by taking such other action necessary to provide himself with all pertinent information regarding the work.

7. STANDARD DETAILS AND SPECIFICATIONS:

All construction will be done in accordance with the latest City of Phoenix Standard Details and Specifications, EXCEPT as otherwise provided in Special Provisions.

8. START AND COMPLETION OF WORK:

The work consists of relocating a 45" City of Phoenix Water Line to provide room for installation of a Bridge by a separate project.

After Notice to Proceed is given the Contractor will order all valves, piping and fittings necessary to construct the project, which items will be stored in the Phoenix area upon delivery. Upon presentation by the contractor of evidence he has paid for the above materials, the City of Scottsdale will pay the Contractor the amount of the paid invoices plus ten (10) per cent, such payments to be deducted from the final pay estimate to be paid on completion.

The existing City of Phoenix 45" water line must remain in service during the high demand period through January. The City of Phoenix between February 8 & February 24, 1975 will pump most of the water out of the existing line by use of the downstream Arcadia Booster Station. The contractor will be given twelve (12) hours notice of this pumping and must immediately commence the work and maintain the following schedule:

Phase "A"

1. Cut existing 45" line, remove remaining water in the pipe, remove necessary existing pipe and complete the work shown on the plans between Sta. 0 - 68.05 (existing joint) and Sta. 0 - 38 (end of spool). This work must be completed in nine (9) calendar days from the twelve (12) hours notice of pumping, not including the day notice of pumping is given. Manholes need not be complete except for blind flanges and valves necessary to place the line in service. All interior piping and fitting surfaces will be swabbed with a 50 p.p.m. chlorine solution for disinfection.

Liquidated damages at the rate of \$250.00 per day will be assessed and deducted from the contract amount due for each day in excess of nine (9) calendar days that this work is incomplete and not ready for pressure.

2. The same work as described in 1. above must be accomplished at the east end of the relocation from Sta. 2 + 09.4 ± (end of spool) to Sta. 2 + 36.4 ± (existing joint) and be complete and ready for pressure in seven (7) additional calendar days, or a total of 16 calendar days from the twelve (12) hour notice of pumping, not including the day notice of pumping is given.

Liquidated damages at the rate of \$250.00 per day will be assessed and deducted from the contract amount due for each day in excess of the total 16 days that this work is incomplete and not ready for pressure.

3. The balance of the work shown on the plans with the exception of the valves to be installed in Phase "B" will be completed, pressure tested, disinfected and ready for service in a total of thirty (30) days from the twelve (12) hour notice of pumping, not including the day notice of pumping is given. Incomplete backfilling, pavement replacement and other items not affecting putting the pipe into service will be allowed in determining if the 30 day deadline is met.

Liquidated damages in the amount of \$250.00 per day will be assessed and deducted from the contract amount due for each day in excess of the total 30 days that this work is incomplete and not ready for service.

4. The City of Phoenix, after the above work is completed and the bacteriological test of the test water is approved will again pump most of the water from the line insofar as possible. The contractor will be given twelve (12) hours of notice of pumping. The contractor will immediately complete draining of the line and then remove the two steel plate bulkheads in the line to restore the line to service.

Four (4) calendar days will be allowed for this work exclusive of the day of notice of pumping.

Liquidated damages in the amount of \$250.00 per day will be assessed and deducted from the contract amount due for each day in excess of the above mentioned four (4) day allowable time in which the work is incomplete and the line not ready for service.

Phase "B"

Phase "B" of the project will consist of installation of the 42" butterfly valves and removal of the spools. This work will be done after October 15, 1975 and before January 1, 1976 upon notice from the City of Phoenix that they are pumping most of the water from the line. The contractor will remove the balance of the water from the line, install the valves and restore the surface. Seven (7) calendar days will be allowed for this work, not including the day notice of pumping is given.

Liquidated damages in the amount of \$250.00 per day will be assessed and deducted from the contract amount due for each day in excess of the above mentioned seven (7) days in which the work is incomplete and the line not ready for service.

9. PAYMENT:

Payment will be made at the unit prices bid in the "Proposal" and shall be compensation in full for furnishing all materials, labor, tools, equipment and appurtenances necessary to complete the work in a satisfactory manner as shown on the plans and as required in the Specifications with all work completed.

10. AFFIDAVIT OF EMPLOYMENT OF LABOR:

The affidavit form (page A.E.L. - 1 in these specifications) must be completed by each bidder and submitted with this "Proposal".

11. CONTRACTOR'S COVERAGE:

The contractor shall furnish satisfactory proof of carriage of insurance, and shall submit to the Engineer a Certificate of Insurance on forms furnished by the City. Neither the contractor nor any subcontractor shall commence work under this contract until the City has approved all insurance policies.

a) Compensation Insurance: The Contractor shall secure and maintain during the life of the contract, Workmen's Compensation Insurance for all of his employees at the site of the Project, and in the case of any of the work is sublet, the Contractor shall require each subcontractor similarly to provide Workmens Compensation Insurance for his employees unless such employees engaged are covered by the Contractor. In the event any class of employees engaged in the hazardous work under this Contract at the site of the Project is not protected by Workmens Compensation Statute, the Contractor shall provide and similarly shall cause each subcontractor to provide special insurance for the protection of such employees not otherwise protected.

b) Public Liability and Property Damage Insurance: The Contractor shall take out, and maintain during the life of this contract, such public liability and property damage insurance, both general and automobile liability, as shall protect him, any subcontractor performing work under this contract and the City of Scottsdale, from all claims for bodily injury, including accidental death, as well as for all claims for property damage arising from operations under this contract - whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The contractor agrees to include the City of Scottsdale as a named insured in all of the insurance policies required under this contract, and shall furnish the City of Scottsdale with a certificate of said insurance. The minimum limits required are:

Public Liability Insurance in an amount not less than One Hundred Thousand Dollars (\$100,000) for injuries, including accidental death, to any one person, and subject to the same limit for each person, in an amount not less than Five Hundred Thousand Dollars (\$500,000) on account of one accident and,

Proptery Damage Insurance in an amount of \$100,000.00.

A General Contractor subletting any part of the work awarded to him shall provide a contingent liability policy in the same amount as provided for in his public liability insurance.

12. EQUAL EMPLOYMENT OPPORTUNITY:

During the performance of this contract the Contractor will not discriminate against any employee or applicacant for employment because of race, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment, lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause; and will in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color or national origin.

13. PAYROLL RECORDS:

(a) Payrolls and basic payroll records will be maintained during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records will contain the name and address of each such employee, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made and actual wages paid.

(b) The Contractor and each subcontractor shall furnish the City, within seven days after the regular payment date of the weekly payroll period, a statement with respect to wages paid to each of the contractor's employees. The copy shall be accompanied by a statement indicating that the payrolls are correct and complete. The definition of "employee" shall not apply to persons in classifications higher than that of laborers or mechanics and those who are the immediate supervisors of such employees.

SPECIAL PROVISIONS

1. SCOPE:

These specifications pertain to the construction of a 42 inch water line relocation in the Indian Bend Wash on Indian School Road in Scottsdale. The construction generally consists of:

- (a) Draining of the existing water line by the Contractor in such a manner to prevent flooding or roadway damage downstream in the Indian Bend Wash after the City of Phoenix Arcadia Booster Station has drained as much as possible.
- (b) Installation of a 42 inch water line to relocate the existing City of Phoenix 45 inch water line which will be removed by a future Bridge project.

2. GENERAL:

(a) In the event of any conflict between these Special Provisions and the requirements of the plans, detail drawings, or City of Phoenix "Standard Details and Specifications", the Special Provisions shall prevail.

(b) In all cases where A.S.T.M., A.A.S.H.O., A.W.W.A., A.S.A., Federal, City of Phoenix, Maricopa County, Arizona State Highway or other Standard Specifications are referred to, the latest revisions shall prevail, unless otherwise stated.

3. RESPONSIBILITY FOR DAMAGE CLAIMS:

The Contractor shall indemnify and save harmless the City and its officers, agents and representatives from all suits, actions, loss, damage, expense, cost or claims of any character or any nature brought on account of any injuries or damages sustained by any person or property arising out of the work done in fulfillment of the construction of the improvements under the terms of this agreement, or on account of any act or omission by the Contractor or his agents, or from any claims or amounts arising or recovered under the Workmen's Compensation laws or any other law, bylaw, ordinance, or order of decree.

4. LOSSES AND DAMAGES:

All loss or damage arising out of the nature of the work to be done or from the action of the elements, or from any unforeseen circumstances in the prosecution of the same, or from any unusual obstructions or difficulties which may be encountered

in and/or during the execution of the work, or from any casualty whatsoever of every description, shall be sustained and borne by the Contractor at his own cost and expense.

5. HINDRANCES AND DELAYS

No charge shall be made by the Contractor for hindrances or delays from any cause during the progress of any portion of the work embraced in this contract; but such delays, if due to no fault or neglect of the Contractor, shall entitle the Contractor to an extension of time, allowed for the delay, the amount of the delay to be determined by the Engineer, provided the Contractor will give the Engineer immediate notice in writing of the cause of such delay.

6. PROTECTION OF FINISHED OR PARTIALLY FINISHED WORK

The Contractor shall properly guard and protect all finished or partially finished work, and shall be responsible for the same until the entire contract is completed and accepted by the Engineer. Estimate of partial payment on work so completed shall not release the contractor from such responsibility but he shall turn over the entire work in full accordance with these specifications before final settlement shall be made.

7. GRADE AND ALIGNMENT

All grades and alignments shall be set from the Plans and Specifications. Field staking shall be set by the Engineer.

8. INSPECTION

(a) Inspectors may be stationed on the work to report to the Engineer as to the progress of the work, the manner in which it is being performed, and also to report whenever it appears that material furnished and work performed by the Contractor fail to fulfill the requirements of the specifications and contract. The Inspector may direct the attention of the Contractor to such failure or infringement but such inspection shall not relieve the Contractor from any obligation to furnish acceptable materials or to provide completed construction that is satisfactory in every particular.

(b) In case of any dispute arising between the Inspector and the Contractor, as to material furnished or the manner of performing the work, the Inspector shall have the authority to reject materials or suspend the work until the question and issue can be referred to and decided by the Engineer. Inspectors are not authorized to revoke, alter, enlarge, relax or release any requirements of these specifications, nor to issue instructions contrary to the plans and specifications. Inspectors shall in no case act as foremen or perform other duties for the Contractor or interfere with the management of the work by the Contractor.

(c) Inspection or supervision by the Engineer shall not be considered as direct control of the individual workman and his work. The direct control shall be solely the responsibility of the Contractor's foreman and superintendent.

9. DUST PREVENTION

The Contractor shall take whatever steps, procedures or means required to prevent abnormal dust conditions due to his construction operations in connection with this contract. The dust control measures shall be maintained at all times during construction of the project, to the satisfaction of the Engineer, in accordance with the requirements of the "Maricopa County Health Department Air Pollution Control Regulations".

10. CARE OF EXISTING STRUCTURES

Existing buildings, structures, power and telephone lines, trees, fences, water pipes, gas lines, sewers or other conduits, embankments, monuments, and sundry structures in the vicinity of the work shall be supported and protected from injury by the Contractor during construction and until completion of the work. The Contractor shall be liable for all damages done to such structures, as herein provided, and shall save and keep the City harmless from any liability or expense for injuries, damages or repairs to same.

11. CLEANUP

After all work under this contract is completed, the Contractor shall remove all loose concrete, lumber, wire, reinforcing, debris and other materials not incorporated in the work from the site of the work; clean-up shall include the removal of all excess pointing mortar materials within pipes and removal of oversize rocks and boulders left after finished grading.

12. FINAL ACCEPTANCE

"Final Acceptance" shall mean a written final acceptance of the work by the City Engineer. The Engineer shall make the final acceptance promptly after all work under the contract has been completed in accordance with the contract documents and after final inspection is made.

13. RIGHTS-OF-WAY

The Contractor, at his own expense, is responsible for the acquisition of any necessary easements for construction purposes which are required in addition to existing easements and/or rights-of-way.

14. INTERPRETATION OF GENERAL CONDITIONS:

Wherever in the General Conditions that the City is referred to it shall be understood that the City referred to is the City of Scottsdale.

15. DELETIONS:

Article 4-20(a) Liquidated damages of Standard Specifications No. 500 - "General Conditions" is hereby deleted.

16. DUMPING AND DISPOSAL OF WASTE:

The Contractor shall provide for the disposal of all waste products, debris, etc., and shall make necessary arrangements for such disposal.

17. PROTECTION OF UTILITIES:

The Contractor shall conduct his work with care so as to prevent any harm to existing utilities. The Engineer has exercised reasonable care in calling out, on the plans, the locations of such utilities as are known to him. The location of existing underground utilities has been determined from maps of the owning utility companies. Where existing surface improvements such as telephone manholes, water valves, etc. were evident they were located by the field survey and are shown in accordance with this survey on the plans. The exact location of existing utilities is not known in all cases. The Contractor shall locate and protect all utilities. The Contractor shall be solely responsible for all additional construction costs due to underground obstructions whether shown on the plans or not. Any irrigation ditches, irrigation structures, or irrigation pipe lines destroyed or damaged due to this installation shall be replaced in kind to original condition at the Contractor's expense.

The Contractor, two working days before digging, shall call for Blue Stakes at the Blue Stake Center, Telephone: 263-1100.

18. TRAFFIC REGULATIONS

(a) The following shall be considered as "Major Streets":

Indian School Road

- (b) All traffic affected by this construction shall be regulated in accordance with the City of Phoenix "Traffic Barricade Manual." Unless otherwise provided in the "Special Traffic Regulations", the following traffic restrictions are minimum requirements throughout the construction period:
- (1) Two travel lanes (one for each direction) shall be maintained open to traffic at all times on all major streets. All existing travel lanes on major streets shall be maintained open to traffic at signalized intersections between the hours of 7:00 a.m. to 9:00 a.m and 4:00 p.m. to 6:00 p.m. unless otherwise specified in the "Special Traffic Regulations."
  - (2) A travel lane shall be defined as 12 feet of roadway with a safe motor vehicle operating speed of 25 miles per hour.
  - (3) Intersection area shall be defined as all of the area within the right of way of intersecting streets, plus two-hundred-fifty (250) feet beyond the edge of the intersected right of way on all legs of the intersection.
  - (4) The Contractor shall provide and maintain all necessary traffic controls to protect and guide traffic for all work in the construction area.
  - (5) All traffic restrictions listed herein are to supplement the City of Phoenix "Traffic Barricade Manual" and are not intended to delete any part of the Manual. All references in the "Traffic Barricade Manual" to "Arterial" and/or "Collector" streets shall mean "Major" streets.
  - (6) A traffic lane will not be considered satisfactorily open to traffic until it has been graded reasonably smooth and is maintained dust free as approved by the City Engineer.
  - (7) Local access shall be maintained to all properties on the project at all possible times. When local access cannot be maintained, the Contractor must notify the affected property owner at least 24 hours in advance and restore access as soon as possible.
  - (8) The Contractor shall maintain all existing STOP, YIELD and street name signs erect, clean and in full view of the intended traffic at all times. If these signs interfere with construction, the Contractor shall temporarily relocate the signs away from construction, but still in full view of the intended traffic.

- (9) Existing traffic signs other than STOP, YIELD and street name signs shall be maintained by the Contractor until such time as construction renders them obsolete.

19. MATERIAL AND EQUIPMENT DRAWINGS

Shop drawings, pipe layout diagrams, manufacturer's catalog data, and detailed information, in sufficient detail to show complete compliance with all specified requirements, shall be furnished to the Engineer, covering but not limited to the following items:

- (1) Gate Valves
- (2) Butterfly Valves
- (3) Fabricated Pipe and Design Data
- (4) Steel Fabrication Items
- (5) Reinforcing Steel
- (6) Castings

Prior to fabrication of pipe, the Contractor shall obtain and submit to the Engineer, manufacturer's drawings and pertinent data as required above.

- (1) Data submitted shall include layout drawings and schedules, with reference to the stationing and grades shown on the plans. The schedules shall show pressure zones, each of which shall be designated by the design pressure applicable therein, and the point of change from one zone to the next shall be clearly indicated by the station number.
- (2) Drawings showing full details of reinforcement, concrete, cement mortar, and joint dimensions for the straight pipe, specials and connections, shall be furnished.
- (3) The diameter of pipe, design pressure, thickness of pipe wall, diameter of steel cylinder, and the area of high tensile steel wire wrap (per linear foot of pipe) shall be listed for each design pressure of the pipeline.
- (4) Prior to fabrication of pipe, materials or equipment, the Contractor shall obtain and submit to the Engineer, for approval, necessary detailed "shop" and "working" drawings, layout drawings, design computations and other pertinent data as follows:

Four copies of each drawing and of all necessary data shall be submitted, of which ONE copy will be returned to the Contractor marked "APPROVED", or "APPROVAL SUBJECT TO CORRECTIONS". After corrections have been made, NINE copies of the corrected drawings and data shall be submitted, of which ONE copy will be returned to the Contractor. If the original submittal is approved, the Contractor shall submit FIVE more copies to the Engineer.

20. PIPE

(a) Transmission Main Pipe

(1) Scope. The pipe shall be the size shown on the Plans, and shall be one of the following types, as specified hereinafter in the Technical Specifications:

- a. Prestressed Reinforced Concrete Pipe, Embedded Cylinder Type, Rigid Type, for all 42 inch pipe.
- b. Reinforced Concrete Pipe, Steel Cylinder Type, not Prestressed, Rigid Type, for all 42 inch pipe.
- c. Pipe 12 inch and under shall be cast iron pipe in accordance with City of Phoenix Specifications.

(b) (1) Pipe Design. The pipe shall be designed in accordance with the Technical Specifications for the above types of pipe, for a working pressure of 60 p.s.i.

Test Pressure 75 p.s.i.

(c) Measurement and Payment

(1) Measurement for pipe shall be the linear feet of pipe installed, measured along the centerline of the pipe, through all valves and fittings, from the centerline of fittings or centerline of valves on ends of pipe to the centerline of fittings, centerline of valves on ends of pipe or to the end of pipe, as the case may be, for all through runs of pipe. Measurement through bends shall be measured on the tangents of the bend. Branches of tees that are valved and capped will not be measured. Measurement shall be to the nearest 0.1 foot. Payment will be made at the unit price bid per linear foot in the Proposal and shall be compensation in full for furnishing and installing all pipe, fittings and specials as called for on the Plans or as specified.

On this job the horizontal, vertical, and sloping runs of 12 inch and smaller pipe will be measured along the centerline of the pipe and payment will be made at the unit price bid in the Proposal for each size of pipe. Payment on the branch lines will start at the outlet flange, or centerline of valve where attached thereto. Payment for pipe shall include the following:

- Excavation and Fine Grading
- Select Material Backfill to Springline of Pipe
- Backfill
- Field Welded Closures
- Disposal of Surplus Excavation
- Pipe, Fittings, Specials, and Adapters
- Pipe End Plugs
- Connecting to Other Pipelines
- Water for Cleaning, Testing and Disinfecting Pipe
- Disposal of Water

Tie Rods or Anchoring Fittings  
Welded Interior or Joints  
Testing Water Main Pressure: Hydrostatic Test  
Disinfecting Water Mains  
Concrete for Thrust Blocks for 12" Pipe and smaller  
Support and Protection of Existing Structures  
Removal of All Irrigation Structures Necessary for  
Construction of this Pipeline  
Support, Protection and/or Relaying of Existing  
Utilities  
Support and/or Moving of Existing Pole Lines  
Protection of Trees, Bushes and Shrubbery  
Dust Control  
Traffic Control, Barricades and Lights  
Fees for Permits and Wet Taps  
Replacing Monuments  
Reconstruction of all destroyed Ditches and Culverts  
Construction of Earth Berms called for on Plans  
Concrete Lining and additional work at all Canal  
Lateral Crossings  
All work not Specifically Covered in other Pay Items

(2) Flanged Outlets

Measurement for flanged outlets shall be made for each outlet furnished and installed in the 42" pipe. Payment will be made at the unit price bid per each size of outlet in the Proposal and shall be compensation in full for furnishing and installing the flanged outlets as shown on the plans, including cement mortar lining and coating. Where blind flanges are shown on the flanged outlets or on the gate valves attached to the flanged outlets, they shall be included with the unit price bid for the outlet or valve.

(3) Concrete Thrust Blocks

Concrete thrust blocks and anchors for the 42" pipeline shall be measured by the cubic yard of concrete in place as shown on the Plans and/or as directed by the Engineer. Payment will be made at the unit price bid per cubic yard and shall be compensation in full for excavation, furnishing formwork, placing and finishing the concrete, reinforcing, backfilling, compaction, disposal of surplus excavation, and any necessary pavement and surface replacement required in excess of the pay widths allowed in City of Phoenix Standard Specification No. 553, for pavement replacement over pipe trenches.

21. TRENCH EXCAVATION, BACKFILLING, AND COMPACTION:

- (a) Trench excavation, backfilling and compaction shall conform to the requirements of Standard Specification No. 600, except as modified herein. In accordance with Standard Specification No. 600, paragraphs .04 (c) (2) and .04 (d), water settlement will be allowed except beneath pavement.
- (b) Backfilling and compaction for the transmission main pipe shall conform to the requirements contained in the Technical Specifications for the two types of pipe.

22. PAVEMENT AND SURFACING REPLACEMENT:

- (a) The materials and method used for replacement of pavement cuts will conform to City of Phoenix Standard Specification No. 553 and Standard Detail 175.
- (b) Measurement and payment will be made for pavement and surface replacement as specified on the plans and in the City of Phoenix Standard Specification No. 553.

23. BLOWOFF AND ACCESS MANHOLES:

- (a) Scope. The Contractor shall construct the blowoff and access manholes in accordance with the details shown on the plans.
- (b) Manholes. Manholes shall conform to Standard Detail No. 372 and the details shown on the plans.
- (c) Measurement and Payment. Measurement of the blowoff and access manholes shall be made for each manhole complete in place. Payment will be made at the unit price bid in the Proposal for each manhole installation for either access only or access and blowoff connections, piping, fittings, and accessories, and shall be compensation in full for each unit complete in place including excavation, concrete slab, pre-cast units, gravel, concrete grouting, cast iron manhole frame and cover, expansion joint material, backfill, compaction, disposal of surplus excavation, and any necessary pavement or surface replacement required in excess of the pay widths allowed in City of Phoenix Standard Specification No. 553 for pavement replacement over pipe trenches.

24. BUTTERFLY VALVES:

- (a) Scope. The butterfly valves shall be of the size shown on the Plans, and shall be of one of the types specified in Standard Specification No. 700, except as modified elsewhere.
- (b) Measurement and Payment. Measurement shall be by each unit. Payment will be at the unit price bid for each valve and shall be compensation in full for the complete installation in place including excavation, concrete pads, brick piers, Dresser type couplings, backfilling, compaction, disposal of surplus excavation, and any necessary pavement and surface replacement required in excess of the pay width allowed in City of Phoenix Standard Specification No. 553 for pavement replacement over pipe trenches.

25. SEQUENCE OF CONSTRUCTION

The right to direct the sequence of 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 work to be performed. 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.

26. DISPOSAL SITE FOR ALL EXCESS MATERIAL

The Contractor shall, prior to final acceptance of the work, submit a letter to the City Engineer stating the location of disposal site(s) for all excess material and certifying that he has obtained the property owner's permission for the disposal of all surplus material.

27. EXTRA FITTINGS

The Contractor shall furnish and install necessary cast-iron tees, bends, crosses, reducers, increasers, offsets, caps, plugs, and blind flanges not called out on the plans or specified, as directed by the Engineer. Such fittings shall comply with City Standard Specification No. 651, as modified in these specifications.

28. VALVE OPTIONS

All 60" valves shall be butterfly valves, in accordance with Standard Specification No. 700, except as modified.

All valves 3" through 12" may be either gate valves or butterfly valves, at Contractor's option, in accordance with Standard Specification No. 700.

29. RELOCATION OF EXISTING UTILITIES

(a) The need to raise, lower, or relocate utilities shall be determined by the Engineer.

(b) The work necessary to the raising, lowering, or relocation of a utility may be done by the owner of the utility or by the Contractor at the option of the owner; all work shall be in accordance with the owner's standards. The expense of raising, lowering or relocation of gas, electric or telephone lines shall be borne by the owner of the utility.

30. MODIFICATION OF STANDARD SPECIFICATION NO. 700

(a) Revise the first sentence of .07 (b) (5) to read as follows:

Materials shall be as spelled out in AWWA C-504, Section 8 - Valve Discs, except that fabricated steel or cast steel discs will not be allowed.

20. (cont'd)

- (b) Revise the last sentence of .07 (b) (5) to read as follows:  
Change 316 stainless steel to type 304 stainless steel or equal.
- (c) Add the following to paragraph .07 (b) (6) a.:  
The mating seat surface (edge) of the valve disc shall be of 18-8, Type 304, stainless steel, held in position with Type 304 stainless steel fasteners.
- (d) Pressure rating of the valves shall be Class 75-B, in lieu of Class 150-B as spelled out in Standard Specification 700, Page 7, Paragraph (b), (1).

REINFORCED CONCRETE WATER PIPE, STEEL CYLINDER TYPE, PRESTRESSED  
AND STEEL CYLINDER TYPE, NOT PRESTRESSED

.01 GENERAL

(a) Scope

This specification covers prestressed, reinforced concrete water pipe, embedded cylinder type, designed and manufactured in accordance with AWWA Specification No. C 301, latest revision, and reinforced concrete water pipe, steel cylinder type, not prestressed, designed and manufactured in accordance with AWWA Specification No. C 300, latest revision, in sizes 30" through 144" inclusive for design pressures through 250 psi maximum.

(b) Pipe Diameter

The pipe diameter specified elsewhere or shown on the plans shall be the inside diameter of the concrete pipe section.

(c) Classes of Pipe

The pipe shall be designed for the working pressures as shown on the plans.

(d) Affidavit of Compliance

An affidavit of compliance as specified in Section 1.11 of AWWA C 300 and Section 1.10 of C 301 will be required.

(e) Delivery of Pipe

Delivery shall be to the job site and storage shall be at the job site.

(f) Identification

Identification marks as specified in Section 1.7 of AWWA C 300 and Section 1.6 of C 301 will be required.

(g) Manufacturer's Drawings and Pertinent Data

Prior to fabrication of the pipe, the Contractor shall obtain and submit to the Engineer for approval, detailed shop drawings, design computations and other pertinent data as specified in City of Phoenix Standard Specification No. 500.

(h) Samples of Concrete Aggregates

Samples of aggregates shall be submitted as specified in Section 2.4 of AWWA C 300 and C 301.

.01 GENERAL

(i) Mill Test Reports and Certificates

- (1) Mill test reports for steel as specified in Section 1.10.3 of AWWA C 300 to Section 1.9.3<sup>4</sup> C 301 shall be submitted in triplicate.
- (2) Test reports in triplicate showing physical properties of rubber used in gaskets shall be furnished.

(j) Test Specimens for Testing by Owner

- (1) Test specimens shall be cut from each shipment of steel in accordance with Section 1.10.4 of AWWA C 300 and Section 1.9.4 of C 301.
- (2) Test cylinders of concrete and mortar shall be furnished. Not less than four cylinders for each day's pour shall be taken. The curing of test cylinders shall be the same as the curing of pipe. Cylinders shall be molded and tested in accordance with S.C.S.-W-8

.02 MATERIALS

(a) Water

The water used in the manufacture and curing of the pipe shall be approved by the Engineer.

(b) Cement

Cement used in manufacture of pipe shall conform to A.S.T.M. C 150 Type II, low alkali.

(c) Concrete Admixtures

No concrete admixture shall be used except as approved by the Engineer.

(d) Liquid Membrane-Forming Compounds

Liquid membrane-forming compounds shall conform to A.S.T.M. C 309, Type I, and shall be of such composition that after drying they will not impart taste or odor to water flowing through the pipe, nor will they contain any toxic materials. The use of such compounds shall be subject to approval of the Engineer.

(e) Paint

The paint or equivalent used for preventing the rusting of steel surfaces at hold backs of mortar lining and/or coating shall be a quick-drying, corrosion resistant material with good bonding properties to the steel, and shall dry tack-free and smooth within four hours after applying. Paint shall be Amercoat #25 or approved equal.

(f) Rubber Gaskets

(1) The joints shall be sealed with a continuous ring gasket made of a special composition rubber of such size and cross section as to fill completely the recess provided for it. The gasket shall be the sole element depended upon to make the joint watertight and shall have smooth surfaces free from pits, blisters, porosity and other imperfections. The rubber compound shall not contain less than 60 percent by volume of first grade synthetic rubber. The remainder of the compound shall consist of pulverized fillers free from rubber substitutes, reclaimed rubber and deleterious substances. The compound shall meet the following physical requirements when tested in accordance with appropriate ASTM Specifications:

a. Tensile Strength

The tensile strength of the compound shall be at least 2100 psi, ASTM Designation D-412.

b. Elongation at Rupture

The elongation at rupture shall be at least 450 percent, ASTM Designation D-412.

c. Specific Gravity

The specific gravity shall be consistent within plus or minus 0.05 and within the range of 0.95 to 1.45, ASTM Designation D-297.

d. Cold Flow

The percentage of cold flow shall not exceed 20. Cold flow determination shall be made in accordance with Method "B", ASTM Designation D 395, with the exception that the test disc shall be a  $\frac{1}{2}$ " long section of the rubber gasket.

e. Tensile Strength After Aging

The tensile strength of the compound after being subjected to an accelerated aging test for 96 hours in air at 158°F. shall not be less than 80 percent of the tensile strength before aging, ASTM Designation D 572.

f. Hardness

Hardness shall be 55, plus or minus 5, in accordance with Shore Durometer Test, Type A, ASTM Designation D 2240.

(2) The Contractor shall submit for approval, details of the shape and size of the gasket he proposes to furnish and certified test results showing material characteristics of the gaskets.

S.C.S. - W-6-3

Reinforced Concrete Water Pipe,  
Steel Cylinder Type, Prestressed  
and Steel Cylinder Type, Not  
Prestressed

(g) Measurement of Materials

A barrel of cement shall be considered as 4 cubic feet or 376 pounds, and a bag of cement shall be considered as one cubic foot or 94 pounds. Cement in standard sacks need not be weighed, but bulk cement shall be weighed. Water for mixing shall be measured by volume or by weight. Concrete aggregates for each batch shall be measured separately by weighing. The proportions of aggregate shall be computed on the saturated and surface-dry basis, and the water cement ratio shall be exclusive of water within the aggregates and absorbed by them. The equivalent unit weights for both fine and coarse aggregates shall be determined in accordance with ASTM Designation C29. The equipment and devices for weighing and measuring shall at all times be accurate within 1%.

(h) Calibration of Cement and Aggregate Scales

All aggregate and cement scales and other measuring devices or containers used in production of the concrete shall be calibrated and sealed by the City Sealer or State Sealer of Weights and Measures, at least once each year.

.03 PIPE DESIGN

(a) Manufacture of the pipe sections and construction of the joints shall conform to the requirements as detailed on the plans. When welded joints or flanged joints are called for on the plans to restrain the pipe under hydraulic thrust, the cylinder and the attachment of joint ring or flange to the cylinder shall be designed for this stress.

(b) Pipe shall be designed for a combination of internal working pressure plus water hammer as specified, water load, pipe dead load, and external earth load. The pipe shall also be designed for the combination of external earth load plus vacuum. Stress analysis of pipe shall be made using "Olander's" coefficients for a 120 degree bedding angle. Earth loads on pipe shall be calculated for pipe installed in projecting embankment condition or trench condition using "Marston's formula." The design shall be based on a height of fill over the pipe as shown on the plans, except where the height of fills are less than 8 feet; then the design shall be based on 8-foot minimum. The soil unit weight shall be based on a weight of 130 pounds per cubic foot. The loading for projecting embankment condition (unlimited trench) shall be derived using a product of the projection ratio and the settlement ratio of 0.4. The limited trench loading shall be derived using a  $K_u$  value of 0.165.

The pipe shall be designed for external loading from trucks on the backfill. Computations shall be based on an H-20 truck loading, using tables based on the Iowa Engineering Experiment Station Bulletin No. 96 and an impact factor of 1.1.

(c) The nonprestress pipe design for combined internal and external loading shall be based on a maximum tensile steel stress of 22,000 psi and the compressive stresses in the concrete shall not exceed 45 percent of the 28-day strength.

(d) Fabricated steel plate fittings shall be designed for internal pressure and external loading. The internal pressure design shall be based upon a design stress of 15,000 psi. The external loading design shall be based upon limiting the deflection in inches under the external loads specified to not more than the square of the diameter in inches divided by 4000. Deflection shall be calculated from "Spangler's formula" using a bedding constant "K" of 0.083, a modulus of soil reaction "E'" of 700, and a deflection lag factor "D<sub>i</sub>" of 1.0. Reinforcement of fittings shall be designed in accordance with supplementary data contained in the AWWA Steel Pipe Manual M 11.

- (1) Fittings shall be Type "B" and specials may be either Type "A" or Type "B" in accordance with Section 4 of AWWA C300. Dimensions shall conform to AWWA C 208.
- (2) Field joints for specials and fittings shall be as called for on the plans. Flanges shall be Class "D" steel ring flanges in accordance with AWWA C207.
- (3) The seams in angle pipe, short-radius bends and special fittings shall be welded in two or more passes, and each weld tested for tightness by the air-soap method or by the dye-penetrant method. However, if the fitting is fabricated from cylinders which have been previously tested hydrostatically, no further test is required for seams so tested. Hydrostatic testing of fittings to a hydrostatic test pressure equal to the design pressure may replace the tests described above. Any defects revealed under any of the alternate test methods shall be rewelded, and the welds again tested.
- (4) All outlets shall be lined and coated with mortar.
- (5) Gaskets for flanged fittings shall be as specified under .12 (e), City of Phoenix Standard Specification No. 603.
- (6) Immediately following curing of lining, each plate fitting shall be protected against loss of moisture by one of the following:
  - (a) Spraying the inside of the pipe barrel with a liquid membrane-forming compound in conformance with .02 (d) of this specification.
  - (b) Tightly capping the ends of the plate fittings with waterproof covers. The waterproof covers shall become a component of the completed fitting to protect the interior of the fitting and shall remain on the fitting until it is installed in the trench.

(e) Joint Rings

- (1) Joint rings for spigot ends for rubber gasket joints shall be Carnegie shape M-3516, M-3818 or M-3836.
- (2) Portions of the joint rings which will be exposed on the completed pipe shall be given a shop coat of paint as specified under .02 (e).

.03 PIPE DESIGN

(f) The manufacturer's design calculations shall be submitted to the Engineer for approval prior to manufacture of pipe or fittings.

.04 SHOP INSPECTION AND TESTS

Shall be in accordance with the applicable provisions of Special Construction Specification S.C.S. - W-8, "Shop Inspections and Tests."

S.C.S. - W-6-6 Reinforced Concrete Water Pipe,  
Steel Cylinder Type, Prestressed  
and Steel Cylinder Type, Not Pre-  
stressed

SHOP INSPECTION AND TESTS FOR STEEL AND STEEL CYLINDER PIPE

.01 GENERAL

This specification covers shop inspection and tests for both rigid and semi-rigid steel and steel cylinder water pipe.

(a) Inspection

- (1) The City and its representatives shall have access to the work wherever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection during the manufacturing process.
- (2) Inspection by the City or its representatives, or failure of the City or its representatives to provide inspection, shall not relieve the Contractor of his responsibility to furnish materials and to perform work in accordance with this specification.
- (3) Material, fabricated parts, and pipe which are discovered to be defective or which do not conform to the requirements of this Specification, will be subject to rejection at any time prior to final acceptance. Rejected material and pipe shall promptly be removed from the site of the work.

(b) Tests of Materials

- (1) In advance of manufacture of the pipe, the Contractor shall furnish the Engineer three (3) copies of the mill test certificates for all steel products incorporated in the pipe. Three copies shall be furnished of mill test reports on each heat from which the steel is rolled.
- (2) The number of pipe cylinders from which weld test specimens are cut shall not exceed one for each type test in every 3,000 feet of pipe or less. The test specimens shall be tested by the City Engineer in accordance with AWWA Designation C-201, or AWWA Designation C-202, except as otherwise required herein. Cylinders from which test specimens are cut may be patch welded in an approved manner and used in the work.
- (3) Compressive strength test cylinders of the concrete or cement mortar used in both lining and coating shall be furnished by the manufacturer. Not less than four cylinders for each test will be taken. At least one test shall be made for each day's pour. All cylinders shall be capped and tested in accordance with ASTM Designation C-39 and C-192.
- (4) Concrete cylinders for steel cylinder pipe, prestressed, shall be molded in accordance with ASTM Designation C-31.

(b) Tests of Materials, continued

(5) Methods of Tests for Cement Mortars and Concrete

a. Mortar Lining

The mortar for all mortar lined pipe shall be sampled and molded by the following procedure:

The mortar sample shall be taken directly from the transfer bucket between the mixer and the charging trough which injects the mixed mortar into the spinning pipe. A sufficient amount shall be extracted to make four (4) 6"x12" cylinders, and shall be placed in a wheelbarrow or other suitable container. The mortar sample material shall then be transported to the location at which the cylinder cans are to remain without moving for the next 24 hours. The mortar shall be thoroughly mixed immediately prior to pouring into the cylinders in order to prevent segregation. After the mortar has been thoroughly mixed, it shall be poured in a continuous stream into the cylinder cans. The cans shall immediately be capped and allowed to remain without disturbing for 24 hours.

b. Mortar Coating

Mortar for all mortar coated pipe shall be sampled by molding four (4) cylinders for compressive tests of the representative material being used to coat the pipe. The mortar sample shall be molded in 4" diameter cylinder in accordance with applicable provisions of ASTM Designation No. D-558.

c. Curing of Test Cylinders

The curing of concrete, lining and coating cylinders for the first 24 hours shall be the same as that for the pipe, except that the mortar for coating cylinders shall be covered with a piece of damp burlap to retard the drying out of the low moisture content of the mortar coating. At the end of 24 hours, the cylinders shall be transported to a moist curing cabinet and cured in accordance with ASTM Designation C-192.

(6) Strength of Cement Mortar Lining, Coating, Concrete and Steel

a. Mortar Lining

The average compressive strength, as per section c. below, of cylinders for mortar lining for the several types of pipe shall be as follows:

1. Semi-Rigid Pipe

Steel pipe and steel cylinder pipe, single wrap, pretensioned, the average compressive strength of cylinders shall be not less than 1700 p.s.i. at seven days and 2300 p.s.i. at 28 days.

Shop Inspection and Tests  
for  
Steel & Steel Cylinder Pipe

.01 GENERAL

(b) Tests of Materials

(6) Strength of Cement Mortar Lining, Coating, Concrete and Steel

a. 2. Rigid Pipe

Steel cylinder pipe prestressed, the average compressive strength of cylinders shall be not less than 3500 p.s.i. at seven days and 4500 p.s.i. at 28 days.

b. Mortar Coating and Concrete for Prestressed Pipe

The average compressive strength, as per section c. below of cylinders for mortar coating and concrete for the several types of pipe shall be as follows:

1. Semi-Rigid Pipe

Steel pipe and steel cylinder pipe, single wrap, pretensioned, the average compressive strength of cylinders shall be not less than 3500 p.s.i. at seven days and 4500 p.s.i. at 28 days.

2. Rigid Pipe

Concrete Cores for Steel Cylinder Pipe, Prestressed and Steel Cylinder Pipe, Not Prestressed

The average compressive strength of cylinders for mortar coating shall be not less than 3000 p.s.i. at seven days and 4500 p.s.i. at 28 days.

- c. To conform to these requirements, the average of any five consecutive strength tests of the laboratory cured specimens shall be equal to or greater than the specified strength, and not more than 20% of the strength tests shall have values less than the specified strength. If any one cylinder falls below 80% of the specified strength at seven days, an extra cylinder from the same batch shall then be broken, and if the strength of this cylinder also falls below 80% of the specified strength, then the entire production represented by these cylinders will not be accepted for purchase by the City until the results of the 28 day test is known, and if it also falls below 80% of the specified strength, the above non-acceptance will become final. The expense of the required tests of cylinders and of testing the welds shall be borne by the City of Phoenix and shall be performed by the Engineer or his duly authorized representative. The cost of cutting and matching metal test specimens shall be borne by the Contractor.

Shop Inspection and Tests  
for  
Steel & Steel Cylinder Pipe

(b) Tests of Materials(6) Strength of Cement Mortar Lining, Coating, Concrete and Steeld. Testing of Steel Pipe Cylinders (Hydrostatic Pressure Test)

Each steel pipe cylinder, prior to embedment in cement mortar, or concrete, shall be hydrostatically tested under a water pressure which stresses the steel to a unit stress of at least 22,000 p.s.i. after the bell and spigot ends have been welded in place. The test shall be performed with rubber gaskets in place, utilizing companion bell and spigot test heads. While under this stress, the welded seams shall be hammered vigorously at one foot intervals with a one pound sledge hammer, and shall be thoroughly inspected.

All parts of the cylinder showing leakage shall be marked for rewelding. After rewelding, such cylinders shall be subjected to another hydrostatic test as stipulated above. The costs of hydrostatic pressure test shall be at the Contractor's expense.

e. Testing of Fittings and Specials

The seams in angle pipe, short-radius bends and special fittings shall be welded in two or more passes, and each weld tested for tightness by the air-soap method or by the dye-penetrant method. However, if the fitting is fabricated from cylinders which have been previously tested, hydrostatically, no further test is required for seams so tested. Hydrostatic testing of fittings to 150% of the design operating pressure may replace the tests described above. Any defects revealed under any of the alternate test methods shall be rewelded, and the welds again tested. The cost of these tests shall be at the Contractor's expense.

02 MARKING, HANDLING AND DELIVERY(a) Marking

Special marks of identification, for each type of water pipe as specified herein, shall be placed on the pipes. These marks shall show the proper location of the pipe or special in the line by reference to layout drawings. All bends shall be marked on the ends with the angle of deflection and the plane through the axis of the pipe. All beveled pipe shall be marked with the amount of the bevel, and the point of maximum bevel shall be marked at the end of the spigot.

(b) Handling and Delivery

All pipe shall be manufactured, handled, loaded, shipped, unloaded and stored at the job site in such a manner as to prevent any damage to the pipe. Any pipe section that becomes damaged shall be repaired as directed by the Engineer, if in his opinion a satisfactory repair can be made, otherwise, it shall be replaced with an undamaged section, at the Contractor's expense. No handling method will be permitted involving lifting from the inside of the pipe.

Shop Inspection and Tests  
for  
Steel & Steel Cylinder Pipe

CONTRACT

THIS AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 1973, by and between the CITY OF SCOTTSDALE, a municipal corporation organized and existing under and by virtue of the laws of the State of Arizona, a party of the first part, hereinafter designated the OWNER, and \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, party of the second part, hereinafter designated the CONTRACTOR.

WITNESSETH: That the said Contractor, for and in consideration of the sum to be paid him by said Owner, in the manner and at the time hereinafter provided, and of the other covenants and agreements herein contained, and under the penalties expressed in the bond hereto attached, hereby agrees, for himself, his heirs, administrators, successors, and assigns as follows:

ARTICLE I - SCOPE OF WORK: The Contractor shall furnish any and all plant, materials, labor, construction equipment, services, and transportation required for performing all work for the construction of Indian School Road 45" Water Line Relocation, and to 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 Engineer and under the direction and supervision of the Engineer or his properly authorized agents and strictly pursuant to and in conformity with the 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 attached "Call for Bids", "Specifications", "Bidders Proposal", "Information for Bidders", "General Conditions", "Special Provisions", "Standard Detail and Specifications", as accepted by the Mayor and Council per Council Minutes of \_\_\_\_\_ 197\_ "Bid Bond", "Plans", and "Statutory Payment Bond", "Statutory Performance Bond", and Addenda thereto, 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 and furnish all plant, materials, labor, construction equipment, services, and transportation for performing all of the work for construction of said improvements and to construct the same and install the materials 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.

ARTICLE IV - PAYMENTS: For and in consideration of the faithful performance of the work herein embraced as set forth in the Contract Documents and Supplemental Agreements, if any, 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 as shown in the estimates in the attached Proposal made a part hereof, and in the Supplemental Agreements hereto, if any, and to make such payment within thirty (30) days after final completion and acceptance of the work.

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

CITY OF SCOTTSDALE, a municipal corporation (Party of the First Part)

By \_\_\_\_\_

Title \_\_\_\_\_

ATTEST:

By \_\_\_\_\_

Title \_\_\_\_\_

Contractor (Party of the Second Part)

By \_\_\_\_\_

(Name and Title) (Seal)

ATTEST:

By \_\_\_\_\_

WITNESS:

If Contractor is an Individual

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

RECOMMENDED FOR APPROVAL:

\_\_\_\_\_  
Capital Improvements Engineer



Item No.	Quantity and Unit	Description (Unit Price in Words)	Unit Prices (In Figures)	Item Total
2.	4 Ea.	Furnish & Install 42" x 90° Bend, the sum of	_____ Dollars	
		and _____ Cents Per Ea.	\$ _____	\$ _____
3.	2 Ea.	Furnish & Install 42" Special Bend, the sum of	_____ Dollars	
		and _____ Cents Per Ea.	\$ _____	\$ _____
4.	5 Ea.	Furnish & Install 24" Flanged Side Outlet with Blind Flange, the sum of	_____ Dollars	
		and _____ Cents Per Ea.	\$ _____	\$ _____
5.	5 Ea.	Furnish & Install Access Manhole Complete, the sum of	_____ Dollars	
		and _____ Cents Per Ea.	\$ _____	\$ _____
6.	2 Ea.	Furnish & Install 42" Flanged to Plain End Spools, the sum of	_____ Dollars	
		and _____ Cents Per Ea.	\$ _____	\$ _____

Item No.	Quantity	Description (Unit Price in Words)	Unit Prices (In figures)	Item Total
7.	5 Ea.	Furnish & Install 8" Fl. Tan. Outlets, the sum of	_____ Dollars and _____ Cents \$ _____ \$ _____ Per Ea.	
8.	4 Ea.	Furnish & Install 8" V.B. &C. "A", the sum of	_____ Dollars and _____ Cents \$ _____ \$ _____ Per Ea.	
9.	1 Ea.	Furnish & Install 8" V.B. & C. "B", the sum of	_____ Dollars and _____ Cents \$ _____ \$ _____ Per Ea.	
10?	500 Lbs.	Furnish & Install C.I. Fittings not shown on plans, the sum of	_____ Dollars and _____ Cents \$ _____ \$ _____ Per Lb.	
11.	2 Ea.	Furnish & Install Anchor Blocks (42" Pipe), the sum of	_____ Dollars and _____ Cents \$ _____ \$ _____ Per Ea.	

Item No.	Quantity and Unit	Description (Unit Price in Words)	Unit Prices (In Figures)	Item Total
12.	4 Ea.	Furnish & Install Thrust Blocks (42" Pipe), the sum of  _____ Dollars and _____ Cents Per Ea.	\$ _____ \$ _____	
13.	128 L.F.	Remove Existing 45" Pipe and Plug to East & West, the sum of  _____ Dollars and _____ Cents Per Ea.	\$ _____ \$ _____	
14.	150 S.F.	Remove and Replace existing 4" Sidewalk, Detail 180, the sum of  _____ Dollars and _____ Cents Per S.F.	\$ _____ \$ _____	
15.	25 L.F.	Remove and Replace existing combined Curb & Gutter, the sum of  _____ Dollars and _____ Cents Per L.F.	\$ _____ \$ _____	

Item No.	Quantity and Unit	Description (Unit Price in Words)	Unit Prices (In Figures)	Item Total
16.	80 S.F.	Furnish & Install 4" A.C. sidewalk, the sum of  _____ Dollars and _____ Cents Per S.F.	\$ _____ \$ _____	
17.	116 S.Y.	Furnish & Install Pavement Replacement, Type "A", the sum of  _____ Dollars and _____ Cents Per S.Y.	\$ _____ \$ _____	
18.	Lump Sum	Plug abandoned 6" Sewer, the sum of  _____ Dollars and _____ Cents Per Lump Sum	\$ _____ \$ _____	
19.	230 L.F.	Reshape Drain Ditch, the sum of  _____ Dollars and _____ Cents Per L.F.	\$ _____ \$ _____	

Item No.	Quantity and Unit	Description (Unit Price in Words)	Unit Prices (In Figures)	Item Total
20.	1 Ea.	Brace the existing Power Pole, the sum of  _____ Dollars and _____ Cents Per Ea.	\$ _____ \$ _____	
21.	1 Ea.	Furnish & Install Junction Box Standard Detail 282, the sum of  _____ Dollars and _____ Cents Per Ea.	\$ _____ \$ _____	
22.	95 L.F.	Furnish & Install 18" R.G.R.C.P. ASTM Cl. IV, the sum of  _____ Dollars and _____ Cents Per L.F.	\$ _____ \$ _____	
23.	Lump Sum	Remove Concrete Irrigation Ditch and construct grade ditch south side, the sum of  _____ Dollars and _____ Cents Per Lump Sum	\$ _____ \$ _____	
PHASE "A" Total Bid Items 1 through 23			\$ _____	

PHASE "B"

Item Total	Quantity and Unit	Description (Unit Price in Words)	Unit Prices (In Figures)	Item Total
24.	2 Ea.	Remove Temporary Spool and Install 42" Butterfly Valves with B & C, "A". (including pavement replacement), the sum of		
				_____ Dollars
		and _____	Cents \$ _____	\$ _____
		Per Ea.		

PHASE "B" Total Bid  
Item 24 \$ \_\_\_\_\_

TOTAL PROJECT BID - Items 1  
through 24 \$ \_\_\_\_\_

The undersigned hereby declares that he has visited the site and has carefully examined the Contract Documents relating to the work covered by the above bid or bids.

The undersigned understands that any quantities stated or implied in the Specifications or elsewhere in the Contract Documents are approximate only, and are subject to increase or decrease, and hereby proposes to perform all quantities of work as either increased or decreased, in accordance with the provisions of the Specifications.

Upon receipt of Notice of Award of this bid, the undersigned will execute the formal contract attached hereto within five (5) days and will deliver simultaneously therewith a Bond for Labor, Material and Performance of Contract in an amount equal to one hundred percent of the amount of the Contract, said bond to be issued by a Surety Company authorized to do business within the State of Arizona and satisfactory to the City of Scottsdale.

The bid Security attached, payable to the City of Scottsdale, in the sum of ten percent of the total bid is to become the property of the City of Scottsdale in the event the Contract and Bonds are not executed within the time set forth as liquidated damages for the delay and additional work caused thereby.

Project No. W-7508

The undersigned understands that the City of Scottsdale reserves the right to reject any or all bids or any part thereof, or to accept any bid or any part thereof, or to waive informalities in any bid, deemed by them to be for the best interest of the City of Scottsdale.

The undersigned is the holder of Arizona State Contractor's License

No. \_\_\_\_\_ and Classification(s) \_\_\_\_\_

Respectfully submitted,

ATTEST:

\_\_\_\_\_  
by \_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Name and Title

Witness: If Bidder is an  
Individual

\_\_\_\_\_  
(Give Bidder's Full Address)

The Bidder hereby acknowledges receipt of the following  
addenda:

\_\_\_\_\_

\_\_\_\_\_  
Contractor

By \_\_\_\_\_  
Name and Title

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 City of Scottsdale, 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 \_\_\_\_\_, 1973,  
for the construction of \_\_\_\_\_ Indian School Road 45"  
Water Line Relocation, Project No. W-7508, 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 under-  
takings, 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.

Project No. W-7508

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 \_\_\_\_\_, 1971.

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
SEAL

By \_\_\_\_\_

\_\_\_\_\_  
SURETY

\_\_\_\_\_  
SEAL

By \_\_\_\_\_

\_\_\_\_\_  
AGENCY OF RECORD

\_\_\_\_\_  
AGENCY ADDRESS

Project No. W-7508

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  
call 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 \_\_\_\_\_, (here-  
inafter 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 \_\_\_\_\_, 1971, to  
\_\_\_\_\_

\_\_\_\_\_ 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 prose-  
cution 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, having been required of the  
said Principal in order to comply with the provisions of Title 34,  
Chapter 2, Article 2, of the Arizona Revised Statutes, all rights and

Project No. 2W-7508

remedies on this bond shall inure solely to such persons and shall be determined in accordance with the provisions, conditions and limitations of said Title, Chapter and Article, to the same extent as if they were copied at length herein.

The prevailing party of any party which recovers judgment on this bond shall be entitled to such reasonable attorneys' fees as may be fixed by the Court or a judge thereof.

WITNESS our hands this \_\_\_\_\_ day of \_\_\_\_\_, 1971.

\_\_\_\_\_  
Principal Seal

By \_\_\_\_\_

\_\_\_\_\_  
Surety Seal

By \_\_\_\_\_

\_\_\_\_\_  
Agency of Record

\_\_\_\_\_  
Agency Address

AFFIDAVIT OF EMPLOYMENT OF LABOR

STATE OF ARIZONA )  
COUNTY OF MARICOPA )

ss.

\_\_\_\_\_, being  
first duly sworn,  
on oath, deposes and says:

That he is the \_\_\_\_\_ of the firm of

\_\_\_\_\_ and as such submitted the attached bid for the Proposed Project W-7508, Indian School Road 45" Water Line Relocation.

That, in the event the contract therefor is awarded his firm, preference in employment of labor thereon will be given to residents of the City of Scottsdale who have resided in said City for a period of six (6) months or more next preceeding the time of their employment, and that such citizens will be employed whenever possible, with the exception of the men necessary to the bidder for his technical staff of his organizstion.

By \_\_\_\_\_

Subscribed and sworn to before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 1973

\_\_\_\_\_  
Notary Public  
My Commission Expires:  
\_\_\_\_\_

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we \_\_\_\_\_  
 \_\_\_\_\_, as principal, and \_\_\_\_\_  
 as surety, are held and firmly bound unto the City of Scottsdale in the  
 penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money  
 of the United States of America, to be paid to the order of the City of  
 Scottsdale, for which payment, well and truly to be made, we bind our-  
 selves, our successors and assigns, sealed with our seals and dated  
 \_\_\_\_\_, 1974.

The conditions of the above obligation are such that whereas the City  
 Council of the City of Scottsdale, on the \_\_\_\_\_ did  
 order the following work to be done, to wit : Project W-7508, Indian  
 School Road 45" Water Line Relocation

WHEREAS, \_\_\_\_\_, the principal herein in answer  
 to the Notice Inviting Proposals or Bids issued by the City of Scottsdale,  
 put in its bid for the making of said improvements.

NOW, THEREFORE, if the bid of \_\_\_\_\_, as aforesaid, be  
 accepted by the City Council of the City of Scottsdale, and \_\_\_\_\_  
 \_\_\_\_\_ shall enter into a contract to make said improvements  
 at the price specified in its bid, then this obligation to be void and  
 of no effect, otherwise to remain in full force and virtue.

PRINCIPAL \_\_\_\_\_

BY \_\_\_\_\_

SURETY \_\_\_\_\_

BY \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
 Attorney in Fact

Attorney in Fact

CITY OF SCOTTSDALE, ARIZONA

ENGINEERING DEPARTMENT

Certificate of Insurance

Project No: \_\_\_\_\_, Project Title: \_\_\_\_\_

The \_\_\_\_\_  
 Certifies that the following insurance policies have been issued on behalf of

Name of Insured \_\_\_\_\_ & the City of Scottsdale as an additional insured.

Address of Insured \_\_\_\_\_

Type of Insurance	Policy No.	Eff. Date	Exp. Date	Limits of Liability
(1) Workmen's Compensation				Statutory
(2) Contractors Protective Bodily Injury				\$100,000 Each Person \$500,000 Each Accident
(2) Contractor's Protective Property Damage				\$100,000 Each Accident \$300,000 Aggregate
(3) Contractual Bodily Injury				\$300,000 Each Person 500,000 Each Accident
(3) Contractual Property Damage				\$100,000 Each Accident 100,000 Aggregate
(4) Automobile Bodily Injury				\$100,000 Each Person 500,000 Each Accident
(4) Automobile Property Damage				\$100,000 Each Accident 100,000 Aggregate

When the project includes construction of a new, or modification of an existing building (in addition to the above types):

(5) Fire and Extended Coverage plus Vandalism and Malicious Mischief - For the Full Amount of the Contract.

	Policy No.	Eff. Date	Exp. Date
(6) Umbrella Coverage			
\$			

Policy Includes Coverage For:

- (1) a. Damage caused by blasting
- b. Damage caused by collapse or structural injury
- c. Damage to underground utilities
- (2) Liability assumed in construction agreements and other types of contracts or agreements in effect in connection with insured operations.
- (3) All owned, hired or non-owned automotive equipment used in connection with the insured operation.

It is agreed that none of these policies will be cancelled or changed so as to affect this certificate until ten (10) days written notice of such cancellation or change has been delivered to City of Scottsdale.

It is further agreed that:

- (1) These policies shall not expire until all work has been completed and the project has been accepted by the City of Scottsdale. (If a policy does expire during the life of the Contract, a renewal Certificate of the required coverage must be sent to the City of Scottsdale not less than five days prior to expiration date.)  
 The Contractor hereby agrees to indemnify and save harmless the City of Scottsdale and any jurisdiction or agency issuing permits for any work included in the project, their officers, agents and representatives from all suits, actions, loss, damage, expense, cost, or claims of any character or any nature brought on account of any injuries or damage sustained by any person or property arising out of the work done in fulfillment of the construction of the improvement under the terms of this agreement, or on account of any act or omission by the Contractor or his agents, or from any claims or amounts arising or recovered under Workmen's Compensation laws or any other law, bylaw, ordinance, or order or decree.

This certificate is not valid unless countersigned by an authorized representative of the Insurance Company.

DATE: \_\_\_\_\_ Countersigned by: \_\_\_\_\_