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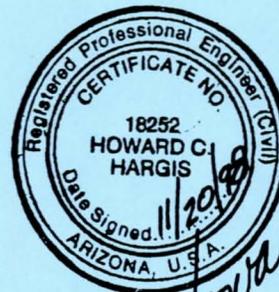
CITY OF TEMPE, ARIZONA
PUBLIC WORKS DEPARTMENT
DIVISION OF ENGINEERING

Contract Documents

for

RIO SALADO TOWN LAKE TEMPORARY LINING
SCHEDULE E

PROJECT NO. 946523E



CITY COUNCIL MEMBERS

Mayor - Neil G. Giuliano

P. Ben Arredondo

Hugh Hallman

Dennis J. Cahill

Joseph Lewis

Leonard Copple

Joe Spracale

1998

SPECIAL NOTICE

**BIDS SHALL BE SUBMITTED IN A SEALED ENVELOPE. THE
OUTSIDE LOWER RIGHT HAND CORNER SHALL BE MARKED:
BID OF _____, CONTRACTOR,**

**FOR: RIO SALADO TOWN LAKE TEMPORARY LINING-
SCHEDULE E - PROJECT NO. 946523E**

TABLE OF CONTENTS

Notice to Contractors	N-1
General Provisions	G-1
Special Provisions	S-1
Technical Specifications	TS-1
Proposal	P-1
Bidder's Project References	PR-1
Subcontractor List	SB-1
Contract	C-1
Performance Bond	B-1
Payment	B-3
Contractor's Affidavit	AFF-1
Appendix	

CITY OF TEMPE, ARIZONA
PUBLIC WORKS DEPARTMENT
DIVISION OF ENGINEERING

NOTICE TO CONTRACTORS

**RIO SALADO TOWN LAKE TEMPORARY LINING
SCHEDULE E
PROJECT NO. 946523E**

SEALED BIDS will be received by the City of Tempe, Arizona, Public Works Administration, City Hall West Garden Level, 31 East 5th Street, Tempe, Arizona 85281, until 2:00 p.m., December 15, 1998. At that time, bids will be opened and publicly read aloud in the Public Works Conference Room. Bids received after the time specified will be returned unopened. If a bid is mailed in or delivered via any overnight mail service, the outside envelope should be marked with the **date and time of the bid opening, as well as the words "PUBLIC WORKS BID OPENING"**. Please allow enough time for delivery as many companies will deliver to one central location, not individual departments.

The proposed work will consist of **CONSTRUCTION OF A TEMPORARY LINING** together with associated work and shall be accomplished in accordance with the "Maricopa Association of Governments Uniform Standard Specifications and Standard Details for Public Works Construction", and "The City of Tempe Supplements thereto" except as otherwise set forth in the Contract Documents.

A bid guarantee acceptable to the City of Tempe in the amount of 10% of the proposal shall be submitted with the proposal. Personal or individual surety bonds are not acceptable. The City requires all bonding companies and liability and excess insurance carriers to have a rating of "A-" or better as listed in the most recent "Best Key Rating Guide (Property and Casualty)" published by A.M. Best Company.

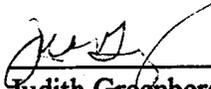
A set of plans, specifications and other contract documents may be purchased from the City Engineering Division (350-8200) upon payment of fifteen dollars (\$15.00) or checked out for a ten (10) day review period upon deposit of fifteen dollars (\$15.00).

A prebid conference has been scheduled for December 1, 1998 at 10:00 a.m. at the Rio Salado Construction Trailer located at 1002 W. Rio Salado Parkway, Tempe, AZ 85281. Although it is not mandatory, bidders are encouraged to attend.

Work shall start within ten (10) days after the date of issuance of Notice to Proceed and shall be completed within ninety (90) calendar days after the Notice to Proceed date.

The City of Tempe reserves the right to reject any and all bids and to waive any informality in the bids received. Award will be made or bids rejected within sixty (60) days after bid opening.

NOTICE: THIS CONTRACT CONTAINS AN EXCLUSIVE AND MANDATORY ALTERNATIVE DISPUTE RESOLUTION PROCESS FOR THE EFFICIENT AND EXPEDITIOUS RESOLUTION OF ALL CLAIMS WHICH MAY ARISE FROM THIS CONTRACT AND OTHER CONTRACTS CONTAINING THESE PROVISIONS FOR THE PROJECT.



Judith Greenberg
Public Works Director

PUBLISH: NOVEMBER 25, 1998 through NOVEMBER 30, 1998 (excluding Sunday)

GENERAL PROVISIONS

SPECIFICATIONS

All work done under this contract shall be accomplished in accordance with the Maricopa Association of Governments Uniform Standard Specifications and Standard Details for Public Works Construction and the City of Tempe Supplement thereto except as modified in these Special Provisions.

In the event of any conflict between these Project Specifications and the requirements of the above referenced specifications, codes and regulations, these Project Specifications shall prevail. All bids to receive considerations shall be made in accordance with the General Conditions of the Standard Specifications as set forth hereinafter.

SECURING DOCUMENTS

Copies of specifications, special provisions, and other proposed contract documents are on file in the office of the City Engineer, City Hall, 31 East Fifth Street, Tempe, Arizona, and are open for public inspection. A set of such documents may be obtained from the City Engineer, upon payment of fifteen dollars (\$15.00), which payment will not be returned. In addition, a set is available to be checked out for a period of ten (10) days upon deposit of fifteen dollars (\$15.00). If the plans and specifications are returned in the original condition (without marks or alterations) and are returned within the specified ten (10) day period, the deposit will be returned. If either of these conditions are not met, the deposit will not be returned but will instead be kept as payment.

INTERPRETATIONS OF DRAWING AND DOCUMENTS

If any person submitting a bid for the proposed contract is in doubt as to the true meaning of part of the specifications or other contract documents, or finds discrepancies in, or omissions from the specifications, he may submit to the Tempe City Engineer a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretations or corrections of the proposed documents will be made by Addendum duly issued, and a copy of each addendum will be mailed or delivered to each person receiving a set of such documents. The City of Tempe will not be responsible for any other explanation or interpretations of the documents.

ADDENDA

Addenda issued during the time of bidding shall be attached to and made a part of the contract documents.

BID SECURITY

Each proposal shall be accompanied by a certified check, cashier's check, or bid bond acceptable to the City in an amount equal to at least ten per cent (10%) of the proposal, payable without condition to the City as a guarantee that the bidder, if awarded the contract, will promptly execute such a contract in accordance with the proposal and in manner and form required by the Contract Documents. Each bid bond shall be executed by a surety company or companies duly authorized to do business in the state and all bond documents shall be executed pursuant to the requirements of Arizona Revised Statutes. The bid security of the two lowest bidders will be retained until the contract is executed or other disposition is made thereof. The bid security of all bidders except the two lowest will be returned promptly after the award of contract.

PROPOSAL

Bids shall be properly executed upon the proposal form attached to and made a part of the contract documents, with items properly filled out. The signature of all persons signing shall be in longhand. The completed forms shall be without interlineations, alterations, or erasures. In case of an error in the extension of unit prices and the totals, the unit price shall govern.

Bids shall not contain any recapitulations of the work to be done. Alternative proposals will not be considered except as called for. No oral, telegraphic, or telephonic proposals or modifications will be considered.

IRREGULAR BIDS

Proposals may be considered irregular and may be rejected if any of the unit prices quoted in the bidding schedule are unbalanced, either above or below the amount of a reasonable bid price, to the potential detriment of the City.

AWARD OF CONTRACT

A contract will be awarded or bids rejected within 60 days after bid opening. The proposal includes two (2) alternates-shotcrete lining and clay lining. The City reserves the right to award a contract for either of the alternatives, whichever is determined to be in the best interest of the City.

INSURANCE AND BOND RATING REQUIREMENTS

Personal or individual bonds are not acceptable.

Bonding companies and Liability and Excess insurance carriers shall be "Best Rated A-" or better as currently listed in the most recent "Best's Key Rating Guide (Property/Casualty)" published by the A.M. Best Company. This requirement does not apply to the Workmen's Compensation/Employers Liability portion on the Certificate of Insurance.

Each such bond SHALL be executed by a surety company or companies duly licensed to do business in the State of Arizona. The bonds shall be written or countersigned by an authorized representative of the surety who is either a resident of the State of Arizona or whose principal office is maintained in this State, and the bonds shall have attached thereto a certified copy of Power of Attorney of the signing official.

INSURANCE REQUIREMENTS

The Contractor's attention is directed to Sections 103.2 and 103.3 of the Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction and all such required insurance policies shall additionally provide full coverage of indemnity to the City as set forth below including an increase in the minimum limits to \$5,000,000 combined single limit coverage. The proof of insurance on the industry standard Acord Insurance form shall be submitted to the City Engineer prior to execution of contract. Builders Risk Insurance shall be provided as applicable, in accordance with Section 103.6C.

BONDS REQUIRED

Bonds in the following amounts will be required at the time of executing the formal contract and must meet the requirements of Arizona Revised Statutes Title 34, Chapter 2:

1. Performance bond, one hundred percent (100%) of the contract price.
2. Payment bond, one hundred percent (100%) of the contract price.

EXECUTION OF CONTRACT AND BONDS

The form of the contract, which the successful bidder, as Contractor, will be required to execute and the form of bonds which he will be required to furnish, are included in the contract documents and should be carefully examined by the bidder. The successful bidder will be required to execute the bonds and the standard form of contract in three (3) original counterparts within ten (10) days after formal notice of award of contract. Failure to execute a contract and file satisfactory contract bonds as provided herein within 10 calendar days after the date of Notice of Award, shall be just cause for the cancellation of the award and the forfeiture of the bid security which shall become the property of the City of Tempe, not as penalty, but in liquidation of damages sustained.

Award may then be made to the next lower responsible bidder or the work may be re-advertised as the City of Tempe may decide.

LICENSES

The Contractor must carry the appropriate State of Arizona contractor's license for the proposed work at the time of the award. If the low bidder does not have the appropriate license, the City reserves the right to reject their bid and award it to the lowest bidder who has the appropriate license.

Prior to execution of the contract documents, the low bidder must possess a valid City of Tempe Transaction Privilege License and shall provide the Permit Number of such for validation.

EXAMINATION OF PREMISES

The Contractor shall visit the site of the project and shall fully acquaint himself with the conditions as they exist, so that he may fully understand the facility, difficulties and restrictions attending the execution of the work.

Bidders shall also thoroughly examine and be familiar with the specifications and other contract documents. The failure of the Contractor to obtain, receive or examine any addenda to the proposed contract documents, or to visit the site and acquaint himself with the conditions there existing, shall in no way relieve him from any obligation with respect to his proposal.

By submitting a proposal, the Contractor agrees that he has examined the site, specifications and other contract documents and accepts, without recourse, all site conditions and the proposed contract documents.

HAUL PERMIT

In any operation where more than one-tenth of an acre of surface area is disturbed and/or when unpaved onsite haul roads are used, the Contractor will obtain a Maricopa County Earth Moving Permit as required under Rule 200 of the Maricopa County Division of Air Pollution Control Requirements. This permit will require that a Control Plan to mitigate dust and tracking problems be submitted to the County for approval prior to issuance of the Earth Moving Permit. The Control Plan should be submitted to the City of Tempe for review prior to County submittal to ensure that all elements of the planned operation are covered. Please contact the Maricopa County Division of Air Pollution Control at 506-6700 for additional details.

In addition, all Contractors hauling fill or excavation materials where the haul exceeds 5000 cubic yards or when the duration of the haul is more than 10 working days are required to obtain a hauling permit before the hauling operation begins. Prior to receiving a hauling permit, the Contractor must submit the required certificate of insurance, a plan showing the proposed haul routes and a complete schedule of his hauling operation to the City of Tempe Transportation Division. Prior to submittal, the Contractor should contact Engineering Services for complete details.

INDEMNIFICATION

To the fullest extent permitted by law, the Contractor, its successors, assigns and guarantors, shall defend, indemnify and hold harmless the City of Tempe, its agents, officers, officials and employees from and against all allegations, demands, proceedings, actions, claims, damages, losses, expenses, judgments, including but not limited to, attorney fees, court costs, and the cost of appellate proceedings, and all claim adjusting, relating to, arising out of, or resulting from any acts, errors, mistakes, omissions, work or services of the Contractor, its agents, employees, or any tier of Contractor's subcontractors in the performance of this Contract. Contractor's duty to defend, indemnify and hold harmless the City of Tempe, its agents, officers, officials and employees shall arise in connection with any allegation, demand,

proceeding, action, claim, damage, loss, expense or judgment that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property including loss of use resulting therefrom, caused by Contractor's acts, errors, mistakes, omissions, work or services in the performance of this Contract including any employee of the Contractor, any tier of Contractor's subcontractors or any other person for whose acts, errors, mistakes, omissions, work or services the Contractor may be legally liable.

The amount and type of insurance requirements set forth herein will in no way be construed as limiting the scope of the indemnity provisions of this agreement.

PLANS TO THE SUCCESSFUL BIDDER

The successful bidder may obtain (7) sets of Specifications for this project from the office of the City Engineer, at no cost.

If he desires more than seven (7) sets, he shall be required to pay the reproduction cost of fifteen dollars (\$15.00) each.

START AND COMPLETION OF WORK

Work shall start within ten (10) days after the Notice to Proceed and shall be completed within ninety (90) calendar days thereafter. The owner reserves the right to delay the Notice to Proceed date up to April 1, 1999 in order to reduce risk due to river flows and to accommodate completion of the dam construction.

CONTRACTOR'S CONSTRUCTION SCHEDULE

Within ten (10) days after execution of the contract, the Contractor shall furnish the City Engineer a proposed Construction Progress Schedule, in the form of a Ghant Chart or Critical Path Method (CPM) diagram, indicating dates of commencement and completion of all major activities required in the contract. During construction, the Contractor shall maintain and revise the construction schedule to reflect changes or conditions encountered in the construction work.

CONTRACTOR'S REPRESENTATIVE

The Contractor shall at all times be present at the work in person or represented by a foreman or other properly designated agent. Instructions and information given by the Engineer to the Contractor's foreman or agent on the work shall be considered as having been given to the Contractor.

NON-DISCRIMINATION

In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or

termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

The Contractor agrees to post hereinafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Contracting officer setting forth the provisions of the Non-Discrimination clause.

RELOCATION OF UTILITIES

Except as otherwise provided in the plans or project specifications, all utilities in conflict with the new work will be relocated by the owner thereof.

MISCELLANEOUS REMOVAL AND RELOCATIONS

Miscellaneous removals and relocations shall be construed to mean the removal of all unsuitable materials whether designated or implied by the plans and specifications, and shall include but not be limited to the removal of such items as pipes, concrete, asphalt, block, brick, rock, metal, etc. of every nature and description, unless such items are specifically designated in a separate bid item. Also, certain items require temporary removal and reinstallation such as mail box stands, sign posts, survey monument frames and covers, etc., and are included in this category.

EXCESS MATERIALS

Excess or unsuitable material, broken asphaltic concrete and broken portland cement concrete shall be disposed of by the Contractor. The Contractor shall, prior to commencement 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.

ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with all Federal, State, and Municipal regulations, laws, and policies relating to air, ground water quality, and water conservation. In addition, the following requirements are applicable for City construction projects.

1. Non-pick up sweepers will not be allowed except as required to make joints during chip sealing operations.
2. Water flooding of trenches with potable water will not be permitted.
3. All paints applied by sprayers shall be of a water-based type.
4. Provisions shall be made to prevent the discharge of construction silt, mud, and debris into City storm drains or streets.
5. Spills of oil, gas, chemical, or any other hazardous materials must be reported and removed

by approved procedures. Mitigation measures shall be taken to prevent contamination of construction storage sites.

6. Concrete waste must be disposed of in an approved location and at least 25 feet from established landscaping.
7. City of Tempe refuse roll-off containers shall be used on City projects.
8. Hazardous wastes shall not be discharged into the City's sanitary sewers or storm drainage system. All waste products shall be disposed of in accordance with applicable regulations.
9. The discovery of archeological ruins or artifacts must be reported immediately, and excavation shall not resume in the identified area until approved by the Engineer.
10. The Contractor shall take whatever steps, procedures, or means to prevent abnormal, material spillage, or tracking conditions due to his construction operations in connection with the Contract. The dust control measures shall be maintained at all times during construction of the project, to the satisfaction of the City Engineer, in accordance with Rule 200 of the "Maricopa County Health Department Air Pollution Control Regulations", which require that an Earth Moving Permit be issued and a Control Plan be approved prior to commencement of work. Contact the County at 506-6700 for details.
11. The Contractor shall comply with all applicable Federal Regulations concerning NPDES permits for storm discharges from construction sites.

No additional payment will be made for compliance with the above items.

In addition to the above, the use of new products made with reclaimed material and that meet project specifications, are encouraged.

SAFETY REQUIREMENTS

The Contractor shall comply with all applicable federal, state, local health and safety regulations, ordinances, and requirements. In addition, the following requirements are applicable for City construction projects.

1. The contractor shall implement a permit-required confined space program (specified under 29 CFR 1910.146) for all excavation work on city-owned property or facilities at a depth greater than four (4) feet.
2. When any City employee is required to enter a confined space during the construction phase of a project, such as for the purpose of inspection, the contractor will follow the City's Confined Space Entry Program. It is the responsibility of the contractor to provide a trained attendant and all necessary equipment required for safe entry.
3. The contractor shall provide upon request, a copy of its written health and safety

program and any required employee training records or certificates.

CLEAN-UP

The Contractor shall, upon completion of the work, remove all temporary construction facilities, debris, and unused materials provided for in the work, and put the work site of the work and public right-of-way in a neat and clean condition. No special payment will be made for this item.

APPROXIMATE QUANTITIES

It is expressly understood and agreed by the parties hereto that the quantities of the various classes of work to be done and material to be furnished under this Contract, which have been estimated, as stated in the Proposal, are only approximate and are to be used solely for the purpose of comparing, on a consistent basis, the proposals offered for the work under this Contract; and the Contractor further agrees that the City of Tempe will not be held responsible if any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission, or misstatement is found to occur in the estimated quantities, the same shall not invalidate this Contract or release the Contractor from the execution and completion of the whole or any part of the work in accordance with the specifications and the plans herein mentioned, and for the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation except as may be provided for in this Contract.

MISCELLANEOUS WORK AND ALLOWANCES

The following items will be included in the work with no direct payment allowed. Payment shall be included in the payment for other items for which direct payment is made.

1. Contractor's expenses for but not limited to mobilization, job site office, storage facilities, traffic control and public safety devices, sanitary facilities, utilities and telephone.
2. Cleanup including day to day cleanup.
3. Notification to residents adjacent to this project prior to start of construction which would affect them.
4. Water required for compaction or dust control.
5. Miscellaneous removals and relocations not otherwise specified in the Technical Provisions.
6. Power pole bracing.

7. Removal of trees twelve inches (12") or less in diameter.
8. Removal, relocation and/or modification of existing walls and fences.
9. Trimming of trees and bushes.
10. Replacement of plant material and repair of irrigation equipment to meet or exceed conditions existing prior to Contractor beginning work.

SUPERVISION BY CONTRACTOR

The Contractor will supervise and direct the work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

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 that phase is completed and accepted by the City Engineer. Estimate or partial payment of 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 payment can be made.

SURVEY CONTROL POINTS

Existing survey markers (brass caps, hand holes or iron pipes) shall be protected by the Contractor or removed and replaced under the direct supervision of the City Surveyor or his authorized representatives. Lot corners shall not be disturbed without knowledge and consent of the property owner and only after such corner has been properly referenced for replacement.

CONSTRUCTION STAKING

Construction staking will be provided by the Contractor in accordance with Section 105.8 of the MAG Specifications unless otherwise provided for in whole or in part in the Special Provisions.

Replacement of construction stakes that have been knocked out due to Contractor's work or lack of work, weather condition, traffic, or vandalism will be at the Contractor's expense.

AUTHORITY OF THE CITY ENGINEER APPOINTED REPRESENTATIVE

The Engineer shall act as the City Engineer's designated representative during the construction period. He shall advise on questions concerning coordination with the City of Tempe, public safety, and quality and acceptability of materials and work performed. The Engineer or his assigned inspector shall interpret the intent of the Contract Plans, Specifications, and Technical Provisions in an unbiased manner. The Engineer or his assigned inspector shall be present on the site at times during construction to monitor the work and to maintain records for contract management. The Engineer shall promptly make decisions relative to the interpretation of the contract document so as to minimize delays in construction. The Engineer will not be responsible for directing construction, control, techniques, sequence, or procedures, or for directing job safety.

SHOP DRAWINGS, SCHEDULES & SAMPLES

In time for each to serve its proper purpose and function, the Contractor shall submit to the Engineer such schedules, reports, drawings, lists, literature samples, instruction, directions, and guarantees as are specified or reasonably required for construction, operation, and maintenance of the facilities to be built and/or furnished under this Contract.

Shop drawings and data shall be submitted to the Engineer in such number of copies as will allow him to retain four (4) copies of each submittal. The submittal shall clearly indicate the specific area of the Contract Documents for which the submittal is made. The additional copies received by him will be returned to the Contractor's representative at the job site. The Engineer's notations of the action which he has taken will be noted on one (1) of these returned copies.

The above drawings, lists, prints, samples, and other data shall become a part of the Contract and a copy of the same shall be kept with the jobsite Contract Documents, and the fabrications furnished shall be in conformance with the same. However, the Engineer's review of the above drawings, lists, prints, specifications, samples, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this Contract nor for fulfilling the purpose of the installation nor from his liability to replace the same, should it prove defective or fail to meet the specified requirements.

BLUE STAKE

The Contractor is required to notify Blue Stake (263-1100) prior to the excavation of any material in accordance with ARS 40-360.22. The Contractor shall directly contact the City for marking of electrical for traffic signals, sprinkler and irrigation facilities.

SALT RIVER PROJECT CONSTRUCTION CLEARANCE AGREEMENT

Salt River Project requires all contractors who will be working on their facilities to sign a standard form "Construction Clearance Agreement" prior to issuance of a license. This agreement sets forth the requirements to complete the proposed work in an allotted time frame or to pay full costs for others to complete. It also obligates the contractor to comply with all applicable federal, state, and local laws, rules, regulations, and ordinances including, but not limited to, the new OSHA Permit Required Confined Space rules. The contractor is responsible for executing a "Construction Clearance Agreement" with Salt River Project, if required, and furnishing a copy to the City of Tempe prior to proceeding with any construction on Salt River Project facilities.

QUALITY CONTROL

All material shall be new and of the specified quality and equal to the accepted samples, if samples have been submitted. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these Contract Documents; and it shall be the duty of the Contractor to call the Engineer's attention to apparent errors or omissions and request instruction before proceeding with the work. The Engineer may, by appropriate instruction, correct errors and supply omissions, which instructions shall be as binding upon the Contractor as though contained in the original contract documents.

At the option of the Engineer, materials to be supplied under this Contract will be tested and/or inspected either at their place of origin or at the site of the work. The Contractor shall give the Engineer written notification well in advance of actual readiness of materials to be tested and/or inspected at point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the material nor shall it preclude retesting or reinspection at the site of the work.

CHANGE ORDERS

In the event that significant changes in the scope of the work, and/or changes in the quantities due to contingencies of construction becomes necessary, such changes shall be made in accordance with Section 104 of General Conditions in the MAG 1979 Uniform Standard Specifications.

INSPECTION

The Contractor is responsible for complying with the specifications and is hereby forewarned that final approval of any work will not be given until the entire project is completed and accepted.

NOTIFICATION OF PROPERTY OWNERS

All property owners that may be affected by the proposed construction activities shall be notified of scope and duration of the construction activities by the Contractor prior to start of construction.

ACCESS

Access shall be maintained to adjacent businesses at all times during construction. Where property has more than one point of access, no more than one access shall be restricted or closed at any one time. Access to adjacent private driveways shall be maintained during all non-working hours.

PROTECTION OF EXISTING FACILITIES

The Contractor is to protect all existing facilities during construction. Utility poles that may be affected by the construction activities shall be protected and/or braced by the Contractor. The Contractor shall notify the appropriate Utility Company or agency of any construction that may affect their facilities and state the course of action which will be taken to protect same.

UNDERGROUND UTILITIES

Underground utilities indicated on the plans are in accordance with maps furnished by the City of Tempe and by each utility company. The locations are only approximate and require verification prior to construction as per Tempe requirements for underground street crossings and potholing.

HINDRANCES AND DELAYS

- A. Except as provided in paragraph B, 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 a time extension sufficient to compensate for the delays. The amount of the delay shall be determined by the Engineer provided the Contractor gives the Engineer immediate notice in writing of the cause of such delay.
- B. The parties agree to negotiate for the recovery of damages related to expenses incurred by the Contractor for a delay under the following circumstances:
 1. If the City is solely responsible for the delay which is unreasonable under the circumstances, and
 2. Which delay was not within the contemplation of the parties to the contract at the time the contract was entered into, and

3. The Contractor can show the impact of the delay on the critical path of the construction activity as indicated in an approved CPM schedule.

The maximum compensation for an unreasonable or unforeseen delay shall not exceed the daily amount specified for liquidated damages as based on the original contract amount.

This section shall not be construed to void any provisions of this contract which require notice of delays, provides for arbitration or other procedure for settlement or provides for liquidated damages.

SUBSIDIARY WORK

All work called for in the specifications and/or shown on the drawings shall be performed by the Contractor and unless a specific bid item is provided for the work, then such portion of the work will be considered subsidiary to other work for which payment is provided.

AS-BUILT DRAWINGS

The Contractor shall provide accurate data and field notes as construction progresses, for preparation of the "As-built" drawings by the Engineer. Final payment for the project will not be given until all such information is submitted.

FINAL ACCEPTANCE & GUARANTEE

"Final Acceptance" shall mean a written final acceptance of the work. The City Engineer shall make the final acceptance promptly after the work has been completed in accordance with the contract documents and after inspection is made. The work performed under this contract shall be guaranteed for a period of one year from the date of final acceptance.

SUBLETTING OF CONTRACT

The Contractor shall perform, with his own organization, work amounting to not less than 50% of the total contract cost unless otherwise provided for in the Special Provisions. Subcontractors to be used on the project shall be identified in the "List of Subcontractors" located on Page SB-1.

SPECIAL PROVISIONS**A. Add the following sections to the General Provisions:****DEFINITION OF OWNER AND ENGINEER**

The term OWNER used in the construction documents refers to the City of Tempe.

The term DESIGN ENGINEER used in the construction documents refers to CH2M HILL.

The term ENGINEER and RESIDENT ENGINEER used in the construction documents refers to PARSONS BRINCKERHOFF CONSTRUCTION SERVICES.

STAGING AREAS

CONTRACTOR shall be responsible for repair or replacement at its own expense of any equipment or materials damaged or destroyed due to flood events or other occurrences within the river, or the staging areas as shown on Drawing E-G-3.

PERMITS

OWNER will obtain and pay only for the following construction permits and licenses:

- US COE Section 404 Permit
- Arizona Department of Environmental Quality Water Quality Certification
- Arizona Department of Water Resources Dam Safety
- Arizona Department of Water Resources Recovery Well Permit
- Arizona Department of Transportation Permit (Pending)
- Maricopa County Environmental Services Department (Certificate of Approval to Construct)
- Flood Control District of Maricopa County (CONTRACTOR shall apply for license)
- Union Pacific Railroad Company (CONTRACTOR Right-of-Entry required)
- Arizona Public Service
- Salt River Project (License/Agreement Pending)

A copy of each permit is attached in the Appendix. CONTRACTOR shall examine the permits and shall conform to the requirements contained therein, including the purchase of additional Bonds or insurance as specified therein, and such requirements are hereby made a part of these Contract Documents as fully and completely as though the same were set forth herein. Failure to examine the permits will not relieve CONTRACTOR from compliance with the requirements stated therein. The Plans stamped by ADWR Dam Safety are available in the City Engineer's office for inspection.

The successful bidder will be required to obtain all other necessary permits and comply with all provisions of said permits. There will be no charge to CONTRACTOR for the necessary City of Tempe permits and inspections.

REPORTS

In preparation of the Drawings and Specifications, DESIGN ENGINEER has prepared the following reports of explorations and tests of subsurface conditions:

1. Report dated December 1994 prepared by CH2M HILL entitled "Geotechnical/ Hydrogeological Data Report for the Rio Salado Town Lake Project."
2. Report dated January 1996 prepared by CH2M HILL entitled "Addendum No. 1 to Geotechnical/Hydrogeological Data Report for the Rio Salado Town Lake Project."
3. Report dated February 1996 prepared by CH2M HILL entitled "Geotechnical/ Hydrogeological Design Report - Rio Salado Town Lake Project."

A copy of these reports are available for review at the office of City of Tempe Engineering during regular business hours.

These reports and drawings are not part of the Contract Documents. CONTRACTOR is not entitled to rely upon other information and data utilized by DESIGN ENGINEER in the preparation of Drawings and Specifications.

OTHER WORK

Other work anticipated to be performed at the site by others prior to, during, and in sequence with the scheduled performance of the Work under these Contract Documents as described in Section 01040, COORDINATION.

Should CONTRACTOR cause damage to the work or property of any separate contractor at the site, or should any claim arising out of or resulting from CONTRACTOR's performance of the Work at the site be made by any separate contractor against CONTRACTOR, OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or any other person, CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by mediation, arbitration, or at law.

CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER, DESIGN ENGINEER, and RESIDENT ENGINEER and the officers, directors, employees, agents, and other consultants of each and any of them harmless from and against all claims, costs, losses and damages, (including, but not limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising directly, indirectly or consequentially out of or resulting from any action, legal or equitable, brought by a separate contractor against OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or the officers, directors, employees, agents, or other consultants of each and any of them to the extent based on a claim caused by, arising out of, or resulting from CONTRACTOR's performance of the Work.

Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of work by any separate contractor at the site give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or the officers, directors, employees, agents, or other consultants of each and any of them or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any mediator or arbitrator which seeks to impose liability on or to recover damages from OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or the officers, directors, employees, agents, or other consultants of each and any of them on account of any such damage or claim.

If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a claim for an extension of time. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with respect to OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or the officers, directors, employees, agents, or other consultants of each and any of them for any delay, disruption, interference or hindrance caused by any separate contractor. This article does not prevent recovery from OWNER, DESIGN ENGINEER, or RESIDENT ENGINEER or the officers, directors, employees, agents, or other consultants of each and any of them for activities that are their respective responsibilities.

ASBESTOS, PCBs, PETROLEUM, HAZARDOUS WASTE, OR RADIOACTIVE MATERIAL

CONTRACTOR shall not be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. Relevant and applicable regulations of federal, state, and local governments will be used to describe "substantial danger." OWNER will not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractors, Suppliers or anyone else for whom CONTRACTOR is responsible.

CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency) and (ii) notify OWNER and RESIDENT ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with RESIDENT ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a claim.

If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. OWNER may reasonably have such deleted portion of the Work performed by OWNER's own forces or others in order that Work for the full Project is completed in a timely and efficient manner

NO DAMAGE FOR DELAY DUE TO FLOODING

It is understood and agreed that CONTRACTOR has considered in its proposal all the risk due to flooding and unavailability of the Work site associated with working in the Salt River and that no additional compensation will be allowed for any delays or inconvenience due to unavailability of the Work site resulting from flooding or stormwater flow in said river. If delays are encountered due to flooding and unavailability of the Work site due to water in the river, the Contract Time will be adjusted in accordance with Section 108.7 of MAG. Refer to Section 01500, paragraph 3.3.D for damage to new Work information.

SUBLETTING OF CONTRACT

This section to include all Work performed under this contract, CONTRACTOR/Bidder shall perform with his own organization Work amounting to not less than 60 percent of the total cost. Subcontractor list will be a required submittal. CONTRACTOR shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or contracts, or of his right, title, or interest therein, without written consent of OWNER.

The CONTRACTOR shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or contracts, or of his right, title, or interest therein, without written consent of the OWNER.

Subcontracts shall be in accordance with and the CONTRACTOR shall be bound by the following provisions:

- A. All subcontracts shall be subject to the approval of the ENGINEER.
- B. All subcontracts shall be in writing and shall provide that all work to be performed thereunder shall be performed in accordance with the terms of the contract.
- C. Subcontractors shall conform to the regulations governing employment of labor.
- D. The subcontracting of any portion of the work will in no way release the CONTRACTOR of his liability under the contract and bonds.

BIDDER QUALIFICATIONS

Contractor licensed in Arizona having successfully constructed not less than one similar facility in scope, nature, quantity, and cost within the preceding 5 years. Provide references for each project constructed within the past 5 years, including name and contact information. Submit all statements of qualification in a separate package, as attachment to bid forms. The determination of sufficiency as defined in this section shall be at the sole discretion of OWNER.

ACTUAL DAMAGES

The Work specified in this Contract embraces an important segment of construction necessary to complete the Rio Salado Town Lake project. Any delay in the completion of this Contract will materially delay the overall completion of the Rio Salado Town Lake project, thereby causing great inconvenience to the public, added cost of engineering and supervision, and other tangible and intangible losses. Therefore, if the Work authorized by this Contract shall remain incomplete after the time specified in the Contract Documents for completion of the Work or after any authorized extension of such stipulated time, the CONTRACTOR shall be liable to the OWNER for the cost of actual damages caused by said delay. Actual damages shall be determined at time of assessment and shall cover all losses and expenses incurred by the OWNER in conjunction with the failure of the CONTRACTOR to complete the Contract Work on time.

OWNER may withhold from CONTRACTOR the amount of \$1,500 per day that the Contract is not completed on schedule (change orders issued will extend original scheduled deadline), as presumptive damages for delay by CONTRACTOR. OWNER shall promptly pay to CONTRACTOR all presumptive damages which exceed actual damages which have been finally determined through the Alternate Dispute Resolution process set forth in this Contract together with 10 percent per annum interest thereon from the date withheld.

Actual damages include, but are not limited to the following items:

1. Damages awarded to other Rio Salado construction contractors resulting from Contract interference or delay caused by the failure of this Contract to be completed on time.
2. Engineering cost associated with delayed contract completion including, but not limited to, inspection, survey layout, materials testing, and contract administration.
3. Loss of anticipated revenues for use of the lake and lake facilities.
4. Other costs that are identified as being directly related to the impact of failure to complete this Contract within the specified Contract time.
5. Cost of financing the Project.

ALTERNATIVE DISPUTE RESOLUTION**Scope**

Notwithstanding anything to the contrary provided elsewhere in the Contract documents, the alternative dispute resolution (ADR) process provided for herein shall be the exclusive means for resolution of claims or disputes arising under, relating to or touching upon the Contract, the interpretation thereof or the performance or breach by any party thereto, including, but not limited to, original claims or disputes asserted as cross claims, counterclaims, third party claims or claims for indemnity or subrogation, in any threatened or ongoing litigation or arbitration with third parties, if such disputes involve parties to contracts containing this ADR provision.

Neutral Evaluator, Arbitrators

The OWNER has selected High-Point Rendel (Charles Dahill) as a Neutral Evaluator to serve as set forth in this ADR process. The OWNER and CONTRACTOR shall each select an arbitrator of their choice within 15 days of the date of execution of this Contract to serve as set forth in this ADR process. Each arbitrator selected shall be a member of the State Bar of the State of Arizona, and shall be experienced in the field of construction law. Neither the arbitrator nor the arbitrator's firm shall have presently, or in the past, represented any party to the arbitration.

Neutral Evaluation Process

If the parties have been unable to resolve the disputes, the following neutral evaluation process shall be used to resolve any such disputes:

1. **Notification of Dispute:** The City Engineer shall promptly notify the Neutral Evaluator in writing of the existence of a dispute.
2. **Nonbinding Information Hearing:** The Neutral Evaluator shall schedule a nonbinding informal hearing of the matter to be held within 7 days from receipt of notification of the existence of a dispute. The Neutral Evaluator may conduct the hearing in such manner as deems appropriate and shall notify each party to attend the hearing and present evidence they believe will resolve the dispute. The Neutral Evaluator is not bound by the rules of evidence in admitting evidence in the hearing and may limit the length of the hearing, witnesses or evidence introduced to the extent that he deems same to be relevant and efficient. Each party to the dispute shall be notified by the Neutral Evaluator that they shall submit a written outline of the issues and evidence intended to be introduced at the hearing and propose resolution of the dispute to the Neutral Evaluator before the hearing commences. Arbitrators shall not participate in such informal hearing or proceedings process.
3. **Nonbinding Decision:** The Neutral Evaluator shall render a nonbinding written decision as soon as possible, but not later than 5 days after the hearing.

Binding Arbitration Procedure

If the neutral evaluation procedure is unsuccessful, the following binding arbitration procedure shall serve as the exclusive method to resolve such a dispute. If any party chooses not to accept the decision of the Neutral Evaluator, such party shall notify the Neutral Evaluator in writing within 3 business days of receipt of the Neutral Evaluator's decision of a request for arbitration. The party requesting arbitration shall post a cash bond with the Neutral Evaluator in the amount of \$5,000, or a greater amount as determined by the Neutral Evaluator, that will defray the cost of the arbitration as set forth in paragraph 13, Fees and Cost, and the proceeds from said bond shall be allocated in accordance with said paragraph by the Arbitration Panel.

1. **Arbitration Panel:** The Arbitration Panel shall consist of the arbitrator selected by the parties involved in the dispute, (i.e., OWNER's arbitrator, CONTRACTOR's arbitrator, or any other CONTRACTOR's arbitrator who has a contract with the OWNER which contains this ADR provision and is a party to the dispute), and the

foregoing arbitrators shall select a neutral arbitrator as set forth herein. The Neutral Evaluator shall participate in the proceedings and in the deliberations but shall not be entitled to vote.

2. **Selection of Neutral Arbitrator:** The selected arbitrators shall choose additional arbitrator(s) (one additional arbitrator or two additional arbitrators as needed to ensure that the arbitration panel will consist of an odd number of arbitrators), within 5 days of receipt of notification of a dispute from the Neutral Evaluator. The Neutral Arbitrator(s) shall have the same qualifications as those of the arbitrators set forth in the Neutral Evaluator, Arbitrators paragraph. In the event that the selected arbitrators cannot agree on additional Neutral Arbitrators as set forth above, the Neutral Evaluator shall select the additional arbitrator(s).
3. **Expedited Hearing:** The parties have structured this procedure with the goal of providing for the prompt and efficient resolution of all disputes falling within the preview of this ADR process. To that end, any party can petition the Neutral Evaluator to set an expedited hearing if circumstances justify it. The Neutral Evaluator shall contact the selected Arbitration Panel and arrange for scheduling of the arbitration at the earliest possible date. In any event, the hearing of any dispute not expedited will commence as soon as practical, but in no event later than 20 days after notification of request for arbitration having been submitted. This deadline can be extended only with the consent of all the parties to the dispute, or by decision of the Arbitration Panel upon a showing of emergency circumstances.
4. **Procedure:** The Neutral Evaluator shall act as Chairman of the Arbitration Panel and will conduct the hearing that will resolve disputes in a prompt, cost efficient manner giving due regard to the rights of all parties. Each party shall supply to the Arbitration Panel a written prehearing statement which shall contain a brief statement of the nature of the claim or defense, a list of witnesses and exhibits, a brief description of the subject matter of the testimony of each witness who will be called to testify, and an estimate as to the length of time that will be required for the arbitration hearing. The Arbitration Panel may review and consider the Neutral Evaluator's decision. The Chairman shall determine the nature and scope of discovery, if any, and the manner of presentation of relevant evidence consistent with the deadlines provided herein, and the parties' objective that disputes be resolved in a prompt and efficient manner. No discovery may be had of privileged materials or information. The Chairman upon proper application shall issue such orders as may be necessary and permissible under law to protect confidential, proprietary or sensitive materials or information from public disclosure or other misuse. Any party may make application to the Maricopa County Superior Court to have a protective order entered as may be appropriate to conform to such orders of the Chairman.
5. **Hearing Days:** To effectuate the parties' goals, the hearing once commenced, will proceed from business day to business day until concluded, absent a showing of emergency circumstances.

6. Award: The Arbitration Panel shall, within 10 days from the conclusion of any hearing, issue its award. The award shall include an allocation of fees and costs pursuant to the Binding Arbitration Procedure paragraph herein. Any award providing for deferred payment shall include interest at the rate of 10 percent per annum. The award is to be rendered in accordance with the Contract and the law of the State of Arizona.
7. Scope of Award: The Arbitration Panel shall be without authority to award punitive damages, and any such punitive damage award shall be void. The Arbitration Panel shall also be without authority to issue an award against any individual party in excess of \$2,000,000, exclusive of interest, arbitration fees, costs, and attorney's fees. If an award is made against any individual party in excess of \$100,000, exclusive of interest, arbitration fees, costs, and attorneys' fees, it must be supported by written findings of fact, conclusions of law and statement as to how damages were calculated.
8. Jurisdiction: The Arbitration Panel shall not be bound for jurisdictional purposes by the amount asserted in any party's claim, but shall conduct a preliminary hearing into the question of jurisdiction upon application of any party at the earliest convenient time, but not later than the commencement of the arbitration hearing.
9. Entry of Judgment: Any party can make application to the Maricopa County Superior Court for confirmation of any award and for entry of judgment on it.
10. Severance and Joinder: To reduce the possibility of inconsistent adjudications, the Neutral Evaluator or the Arbitration Panel, may at the request of any party, join and/or sever parties, and/or claims arising under other contracts containing this ADR provision, and the Neutral Evaluator, (Chairman) may, on his own authority, join or sever parties and/or claims subject to this ADR process as they deem necessary for a just resolution of the dispute, consistent with the parties' goal of the prompt and efficient resolution of disputes. Nothing herein shall create the right by any party to assert claims against another party not recognized under the substantive law applicable to the dispute. Neither the Neutral Evaluator or the Arbitration Panel are authorized to join to the proceeding parties not in privity with the OWNER.
11. Appeal: Any party may appeal errors of law by the Arbitration Panel if, but only if, the errors arise in an award in excess of \$100,000; the exercise by the Chairman or Arbitration Panel of any powers contrary to or inconsistent with the Contract; or any of the grounds provided in A.R.S. 12-1512. Appeals shall be to the Maricopa County Superior Court within 15 days of entry of the award. The standard of review in such cases shall be that applicable to the consideration of a motion for judgment notwithstanding the verdict, and the Maricopa County Superior Court shall have the authority to confirm, vacate, modify or remand an award appealed under this section.

12. Uniform Arbitration Act: Except as otherwise provided herein, binding arbitration pursued under this provision shall be governed by the Uniform Arbitration Act as enacted in Arizona in A.R. S. 12-1501, et. seq.
13. Fees and Costs: Each party shall bear its own fees and costs in connection with any informal hearing before the Neutral Evaluator. All fees and costs associated with any arbitration before the Arbitration Panel, including without limitation and the Arbitration Panelists' fees, and the prevailing party's attorneys' fees, expert witness fees and costs, will be paid by the nonprevailing party, except as provided for herein. The determination of prevailing and nonprevailing parties, and the appropriate allocation of fees and costs, will be included in the award by the Arbitration Panel. Fees for the Neutral Evaluator shall be a project cost.
14. Confidentiality: Any proceeding initiated under ADR shall be deemed confidential to the maximum extent allowed by Arizona law and no party shall make any disclosures related to the disputed matter or the outcome of any proceeding except to the extent required to seek interim equitable relief or to enforce an agreement reached or an award made hereunder.
15. Equitable Litigation: Notwithstanding any other provision of ADR to the contrary, any party can petition the Maricopa County Superior Court for interim equitable relief as necessary to preserve the status quo and prevent immediate and irreparable harm to a party or to the Project pending resolution of a dispute pursuant to ADR provided for herein. No court may order any permanent injunctive relief except as may be necessary to enforce an order or award entered by the Arbitration Panel. The fees and costs incurred in connection with any such equitable proceeding shall be determined and assessed in ADR.
16. Change Order: Any award in favor of the CONTRACTOR against the OWNER or in favor of the OWNER against the CONTRACTOR shall be reduced to a Change Order and executed by the parties in accordance with the award and the provisions of General and Special Conditions to this Construction Contract.
17. Merger and Bar: Any claim asserted pursuant to this ADR process shall be deemed to include all claims, demands, and requests for compensation for costs and losses or other relief, including the extension of Contract Time which reasonably should or could have been brought against any party that was or could have been brought into this ADR process. The Arbitration Panel shall apply legal principles commonly known as merger and bar to deny any claim or claims against any party regarding which claim or claims recovery has been sought or should have been sought in a previously adjudicated claim for an alleged cost, loss, breach, error, or omission

SALES TAX

The low bid will be determined by the TOTAL BID INCLUDING ARIZONA STATE, CITY OF TEMPE, AND MARICOPA COUNTY PRIVILEGE (SALES) TAXES. Arizona State, City of

Tempe, and Maricopa County privilege (sales) tax will be calculated and added to the Base Bid Extended Total by using the following formula:

Base Bid Extended Total	x	65%	x	State Rate (5%)	=	State Tax
Base Bid Extended Total	x	65%	x	City Rate (1.7%)	=	City Tax
Base Bid Extended Total	x	65%	x	County (.75%)	=	County Tax

This contract will be awarded on the Total Bid. Payment on this contract will be based on the Extended Total Amount plus applicable privilege taxes. All change orders will be calculated and paid in the same manner as stated above.

STOCKPILE SITE - ALTERNATIVE B

If Alternative B is selected by the OWNER, the CONTRACTOR may process and stockpile material excavated from the project in the designated CONTRACTOR's Staging and Storage Area as shown on Drawing E-G-3 in a location designated by the RESIDENT ENGINEER. This site is located on the north side of the Rio Salado Parkway just west of the Karsten Golf Course. The stockpile must be removed within four (4) months after issuance of the Notice to Proceed unless otherwise approved by the RESIDENT ENGINEER. The location of the stockpile must not interfere with existing and future utility construction. No stockpiling will be permitted within the river floodway. The OWNER will not release the Contractor's Performance Bond until the stockpiled material is completely removed from the site.

CLAY BORROW MATERIAL - ALTERNATIVE B

The intent of the work is to provide a temporary seal to the lake as a means of reducing infiltration. In that respect, the permeability specifications included in Section 02778 must be adhered to. The CONTRACTOR shall include with the bid a statement concerning the source of the clay lining borrow material and evidence that the clay will meet the requirements of Section 02778. The OWNER reserves the right to reject the bid as nonresponsive if this information is not provided.

QUANTITY ADJUSTMENT

The OWNER may chose to reduce quantities up to 50 percent of bid amount without adjusting the unit prices bid.

B. Modify the following sections within the General Provisions:

SPECIFICATIONS

Replace the first paragraph of this section within the General Provisions with the following:

All Work done under this contract shall be accomplished in accordance with these Project Specifications supplemented by the Maricopa Association of Governments (MAG)

Uniform Standard Specifications and Standard Details for Public Works Construction and the City of Tempe Supplement, including 1995 revisions.

INSURANCE REQUIREMENTS

Add the following to this section within the General Provisions:

Include the following as additional insureds:

OWNER: City of Tempe

DESIGN ENGINEER: CH2M HILL

RESIDENT ENGINEER: Parsons Brinckerhoff Construction Services

OTHER: Arizona State University

OTHER: Flood Control District of Maricopa County

INDEMNITY

Replace the first paragraph under this section in the General Provisions with the following:

To the fullest extent permitted by laws and regulation, CONTRACTOR shall indemnify and hold harmless OWNER, DESIGN ENGINEER, RESIDENT ENGINEER, their employees and agents from and against all losses and expenses, direct, indirect, or consequential, and all claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description brought or recovered against them by any reason of any act, omission, negligence, or claimed negligence of OWNER, DESIGN ENGINEER, RESIDENT ENGINEER, their employees and agents, other than for loss or damage resulting from the sole negligence of the OWNER, DESIGN ENGINEER, RESIDENT ENGINEER, their employees, and agents, arising from the Work, completed Work, or product under this contract.

CONTRACTOR'S CONSTRUCTION SCHEDULE

Delete this section in the General Provisions and refer to Section 01310, PROGRESS SCHEDULES.

MISCELLANEOUS WORK AND ALLOWANCES

Replace Item No. 1 of this section in the General Provisions with the following:

1. CONTRACTOR's expenses for, but not limited to, mobilization, jobsite office, storage facilities, traffic control and public safety devices, sanitary facilities, utilities, and telephone, unless specifically allowed in the Contract Documents.

SHOP DRAWINGS, SCHEDULES, AND SAMPLES

Delete the second paragraph of this section in the General Provisions and refer to Section 01300, SUBMITTALS.

QUALITY CONTROL

Add the following to this section within the General Provisions:

Tests required by Contract Documents to be performed by CONTRACTOR and that require test certificates be submitted to OWNER or RESIDENT ENGINEER for acceptance shall be made by an independent testing laboratory or agency licensed or certified in accordance with Laws and Regulations and applicable state and local statutes. In the event state license or certification is not required, testing laboratories or agencies shall meet the following applicable requirements:

1. "Recommended Requirements for Independent Laboratory Qualification" published by the American Council of Independent Laboratories.
2. Basic requirements of ASTM E329, "Standard of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction" as applicable.
3. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

FINAL ACCEPTANCE & GUARANTEE

Add the following:

Prior to requesting a certificate of final acceptance, and allowing occupancy of the facilities, CONTRACTOR shall provide an inspection by a state industrial representative or a federal or state (OSHA) representative qualified in the construction type being inspected, to determine that the facilities provided are in compliance with the state and federal safety requirements. Signed copies of the inspection reports shall be submitted to RESIDENT ENGINEER for OWNER's files. Violations or deficiencies noted therein shall be resolved by CONTRACTOR prior to occupancy of the facilities and before final payment will be made.

CONTENTS

Pages

TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

01010	Summary of Work.....	1- 3
01025	Measurement and Payment	1- 5
01040	Coordination.....	1- 9
01092	Abbreviations	1- 4
01300	Submittals.....	1- 9
	Supplement:	
	Transmittal of Contractor's Submittal	1- 1
01310	Progress Schedules.....	1- 5
01500	Construction Facilities and Temporary Controls	1- 12
01700	Contract Closeout.....	1- 4

DIVISION 2 - SITE WORK

02140	Diversion and Care of Water.....	1- 5
02205	Excavation.....	1- 2
02778	Temporary Clay Lining.....	1- 8

DIVISION 3 - CONCRETE

03362	Temporary Shotcrete Lining	1- 7
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DIVISIONS 4 THROUGH 16 (NOT USED)

APPENDIX

DRAWINGS (BOUND SEPARATELY)

END OF SECTION

**SECTION 01010
SUMMARY OF WORK**

PART 1 GENERAL

1.1 RIO SALADO TOWN LAKE PROJECT

- A. The City of Tempe, Arizona's, Rio Salado Town Lake Project is an urban redevelopment project focused on the construction of a 200-acre recreational lake in the normally dry Salt River bed. Water flows in the river channel in response to flood events. Water may also occur in the river due to localized storm events or incidental releases into the storm drain system.
- B. The 2-mile long lake will be formed by impounding water using air-inflatable rubber dams. The depth of the lake will vary from 6 feet at the upstream end to 19 feet at the downstream end. During seasonal flooding, the dams will be lowered to allow flood waters to pass downstream. When flooding stops, the dams will be raised to impound water for the lake once again. When fully deflated, the dams must pass the 100-year peak flood flows of 215,000 cfs and must also pass the peak sediment volume of 230,000 tons per day during the 100-year event. It is expected that the dam will be fully deflated during about 10 percent of the flood events.
- C. The downstream dam will consist of a 16-foot high rubber dam on a 3-foot high sill and will control the water level in the lake. A smaller 6-foot high dam at the upstream end will capture local river discharges, creating a wetlands-type riparian enhancement zone while reducing the flow of pollutants into the lake.
- D. Infiltration from the lake will be controlled by a combination of cutoff walls and controlled extraction/recovery wells. Infiltration from the downstream (western) portion of the lake will be controlled using cutoff walls along the lake boundary. Approximately 10 recovery wells will be used along the upstream (eastern) portion to collect and pump back to the lake an estimated 40 million gallons per day of infiltrated water.
- E. A reliable source of water is required as makeup water for losses due to evaporation. Facilities provided include new connections to the Salt River Project canal system for delivery to the lake. Water for the initial filling of the lake and for monitoring the lake water level will be conveyed through a new - 48-inch pipeline. This pipeline provides a connection between the existing SRP Lateral 2-4.6 and the existing 66-inch storm drain which empties into the lake.
- F. A stormwater management system will be constructed to improve the water quality in the lake by reducing the inflow of potential pollutants and

contaminants. Stormwater diversions will capture and bypass the "first flush" from several major stormwater discharges to a point either upstream or downstream of the lake. In addition, detention areas will be provided to reduce the potential for spills from the Red Mountain Freeway entering the lake.

- G. A reliable source of water is required as makeup water for losses due to evaporation. Facilities provided include new connections to the Salt River Project canal system for delivery to the lake. Water for the initial filling of the lake and for monitoring the lake water level will be conveyed through a new 48-inch pipeline. This pipeline provides a connection between the existing SRP Lateral 2-4.6 and the existing 66-inch storm drain which empties into the lake.
- H. The Rio Salado Town Lake Project is divided into the following six schedules:
 - 1. Schedule A: Pipe and Well Systems.
 - 2. Schedule B: Dam Facilities.
 - 3. Schedule C: Shoreline Improvements.
 - 4. Schedule D: Cutoff Wall Construction.
 - 5. Schedule E: Temporary Lining.
 - 6. Schedule F: Levee Penetrations.

1.2 WORK COVERED BY THESE CONTRACT DOCUMENTS (SCHEDULE E)

- A. The completed Work covered by these Contract Documents will provide OWNER with the improvements to the lake bottom for the purpose of controlling seepage from the Town Lake. The completed Work includes one of the following alternatives:
 - 1. Alternative A: Temporary lining of river bottom with shotcrete.
 - 2. Alternative B:
 - a. Excavation of 2 feet of material from river bottom.
 - b. Temporary lining of river bottom with either shotcrete or clay.
- B. The Deductive Option specified in the Contract Documents is as follows:
 - 1. Moisture Control Maintenance: The deductive option will include all labor, materials, and equipment required for maintenance of the moisture control of the clay lining.

1.3 WORK NOT COVERED BY THESE CONTRACT DOCUMENTS

- A. Schedule A: Pipe and Well Systems.
- B. Schedule B: Dam Facilities.

- C. Schedule C: Shoreline Improvements.
- D. Schedule D: Cutoff Wall Construction.
- E. Schedule F: Levee Penetrations.

1.4 PROVISIONS FOR FUTURE WORK

- A. Provisions for future construction are as shown.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 GENERAL**1.1 ADMINISTRATIVE SUBMITTALS**

- A. Schedule of Values: Submit schedule on CONTRACTOR's standard form.
- B. Application for Payment.
- C. Final Application for Payment.

1.2 SCHEDULE OF VALUES

- A. Prepare a separate schedule of values for Work under the Agreement. The schedule of values will serve as the basis for progress payments.
- B. Lump Sum Work:
 - 1. Reflect schedule of values format included in conformed Bid Form, specified allowances, alternates, and equipment selected by OWNER, as applicable.
 - 2. List Bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.
 - 3. Break down by Division 2 through 16 with appropriate subdivision of each Specification for each of the Project facilities.
- C. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.
- D. Each pay item reflecting a schedule of values shall be subject to a review and approval of RESIDENT ENGINEER. An unbalanced or front-end loaded schedule will not be acceptable.
- E. Summation of the complete schedule of values representing all Work shall equal the Contract Price.
- F. Submit schedule of values on 3.5-inch, 1.44mb diskettes, in a spreadsheet format compatible with the latest version of Excel.

1.3 APPLICATION FOR PAYMENT

- A. RESIDENT ENGINEER shall prepare both monthly and final contract progress payments and submit to OWNER for approval. Payment shall be based on data received from CONTRACTOR, subject to evaluation and concurrence of RESIDENT ENGINEER.

- B. CONTRACTOR shall transmit application for payment to RESIDENT ENGINEER on a draft Application for Payment Form provided by OWNER.
- C. Attach one Schedule of Value form with each draft application for payment for each lump sum item of Work and include a request for payment of materials and equipment on hand as applicable. Execute certification by authorized officer of CONTRACTOR.
- D. Preparation:
 - 1. Round values to nearest dollar.
 - 2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form for each schedule as applicable.
 - 3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form(s) for each schedule as applicable, a listing of materials on hand for each schedule as applicable, and such supporting data as may be requested by RESIDENT ENGINEER.

1.4 MEASUREMENT-GENERAL

- A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.
- B. Whenever pay quantities of material are determined by weight, the material shall be weighed on scales furnished by CONTRACTOR and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigher and delivered to RESIDENT ENGINEER at the point of delivery of the material.
- C. If material is shipped by rail, the car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.
- D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by RESIDENT ENGINEER. Each vehicle shall bear a plainly legible identification mark.
- E. Quantities in Bid List are Based on Profile Elevations: Existing ground profiles shown on Drawings were taken from a 1994 topographic map drawn with contour intervals of 1 foot with supplementary spot elevations to the nearest half foot.

- F. Payment quantities will be based on field measurements.
- G. Units of measure shown on the Bid Form shall be as follows unless specified otherwise.

<u>Item</u>	<u>Method of Measurement</u>
SY	Square Yard-Measured in-place area
LS	Lump Sum-Unit is one; no measurement will be made

1.5 PAYMENT

- A. General: Progress payments will be made monthly on the date established at the preconstruction meeting.
- B. Payment for Lump Sum Work covers all Work specified or shown within the limits or Specification sections or as described as follows:
 1. Item No. 1, Mobilization/Demobilization: CONTRACTOR shall be compensated for one-time mobilization/demobilization of CONTRACTOR's personnel, equipment, supplies, incidentals, establishment of offices, building and other facilities required for the performance of the Work under this contract. Payment for mobilization/demobilization will be made at the contract lump sum price shown in the Bid Schedule for Bid Item 1, Mobilization/Demobilization. Payment shall be made in equal one-third portions. The first one-third shall be paid with CONTRACTOR's first monthly progress payment. The second one-third shall be paid when the total payment to CONTRACTOR for the bid items under this contract, exclusive of payment for mobilization/demobilization, equals one-half of the total bid amount. The remaining one-third shall be paid as part of the final contract payment due CONTRACTOR. If CONTRACTOR performs a second mobilization/demobilization of personnel, material, and/or equipment at the RESIDENT ENGINEER's expressed written request, CONTRACTOR shall be compensated for such expense at CONTRACTOR's actual cost. CONTRACTOR shall provide all documentation requested by DESIGN ENGINEER in support of said cost.
 2. Item No. 2, Diversion and Care of Water and Miscellaneous Items: Includes all labor, materials, and equipment required for the preparation of the Water Diversion and Control Plan, preparation of the Water Handling and Removal Plan, construction and maintenance of any temporary diversion and protection works necessary to manage river flows, other storm water drainage flows, and dewatering systems, cleanup, settlement monitoring, disposal of water, protection of

property, and all Work for the project with the exception of those items specifically listed as either lump sum or unit price items.

3. Deductive Option, Moisture Control Maintenance: Includes all labor, materials, and equipment required for the control of moisture of the clay lining as specified in Section 02778, TEMPORARY CLAY LININGS. Payment for the moisture control shall be on a lump sum basis. CONTRACTOR shall be compensated for this item only if the OWNER elects to implement this option.

C. Payment for unit price items covers all Work necessary to furnish and install the following items:

1. Item No. 3: Temporary shotcrete liner. Includes all labor, materials, and equipment required for removal of alluvium overburden, excavation, subgrade preparation, furnishing and placement of shotcrete, curing, backfill, and all other miscellaneous items required for the complete structure shown. Payment for the temporary liner shall be paid on a square yard of concrete placed by area basis. Area placed will be measured jointly by CONTRACTOR and RESIDENT ENGINEER.
2. Item No. 4: Temporary clay liner. Includes all labor, materials, and equipment required for removal of alluvium overburden, excavation, subgrade preparation, furnishing and placement of clay, curing, backfill, moisture control maintenance, and all other miscellaneous items required for the complete structure shown. Payment for the temporary liner shall be paid on a square yard of clay placed by area basis. Area placed will be measured jointly by CONTRACTOR and RESIDENT ENGINEER.

1.6 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.
4. Material not unloaded from transporting vehicle.
5. *Defective* Work not accepted by OWNER.
6. Material remaining on hand after completion of Work.

1.7 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to RESIDENT ENGINEER.

- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to CONTRACTOR unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01040
COORDINATION****PART 1 GENERAL****1.1 SUBMITTALS**

- A. Photographs and other records of examination.

1.2 PARTNERING

- A. OWNER and CONTRACTOR will have a partnering relationship as described in the Special Provisions. In addition, other public utilities, agencies, and contractors will be included in the partnering process.

1.3 OTHER WORK

- A. Coordination of OWNER's Work by Others: Reference the General Conditions for coordination of OWNER's work by others, if any, and coordinate CONTRACTOR's Work with OWNER or OWNER's designated coordinator.
- B. Other work is anticipated to be performed at site by others prior to, during, and in sequence with scheduled performance of Work under these Contract Documents as follows:
- C. Public Utilities and Agencies:
1. Power:
 - a. Agency and Contact Person: Arizona Public Service, Vicki Reynolds, telephone number: 602/493-4433.
 - b. Work to be performed by APS.
 - 1) Incoming underground power cables, materials, installation, termination, and connections to all facilities.
 - 2) Transformers supplying main electric service to the facility.
 - 3) Metering facilities, except as indicated.
 - 4) Work to be performed by APS should be complete prior to award of this contract.
 - c. Work to be Performed by CONTRACTOR: Coordinate CONTRACTOR's Work with APS.
 - d. OWNER will be responsible for payment of direct charges of APS.
 2. Flood Control District of Maricopa County (FCDMC):
 - a. OWNER will obtain a license from the FCDMC prior to any work which impacts the levees or other flood control features.

- b. OWNER will notify the FCDMC at least 48 hours prior to any construction activities which require disturbing the levee CSA or gabions. This will allow the FCDMC inspector to be onsite for inspection purposes.
- c. OWNER will not backfill over any levee gabions that may be distributed as part of construction without first having the gabions inspected by the FCDMC. Any damage to the gabions shall be repaired by CONTRACTOR to the satisfaction of the FCDMC.
- d. OWNER will not place backfill or concrete against the levee CSA without first having the CSA inspected by the FCDMC. Any damage to the CSA shall be repaired by CONTRACTOR to the satisfaction of the FCDMC.
- e. CONTRACTOR shall allow inspection by FCDMC representative(s) for the activities specified above.

D. Other Contractors:

- 1. Schedule B: Dam Facilities (Ogden Remediation).
 - a. Upstream and downstream dam.
 - b. Upstream and downstream dam control buildings.
- 2. Schedule F: Levee Penetrations (contractor unknown).
 - a. New storm drain outfalls into Town Lake.
 - b. New marina.
- 3. The work by these other contractors will be conducted concurrently with this contract.
- 4. Work to be Performed by CONTRACTOR:
 - a. Coordinate CONTRACTOR's Work with work of other contractors, particularly at the following locations:
 - 1) Haul Road: Preexisting haul road that runs the full length (east to west) of the temporary liner area needs to be maintained such that the Schedule B and Schedule F contractors have access to the work areas.
 - 2) Upstream Dam: The Schedule B contractor will require access to the downstream side of the upstream dam. Schedule B contractor's work area extends 100 feet west of the upstream dam foundation.
 - 3) Levee Penetrations: The Schedule F contractor will require access to the river bottom along the northshore and southshore.
 - b. CONTRACTOR shall coordinate scheduling and sequencing of work with Schedule B and Schedule F contractors.

1.4 UTILITIES

A. Coordinate Work with various utilities within Project limits. Notify applicable utilities prior to commencing Work, if damage occurs, or if conflicts or emergencies arise during Work.

1. Salt River Project Electricity Company:
 - a. Contact Person: Jim Frescholtz.
 - b. Telephone: 602/236-8476.
2. U.S. West Telephone Company:
 - a. Contact Person: Bruce Bartlett.
 - b. Telephone: 602/831-4753.
3. City of Tempe Water Department:
 - a. Contact Person: Don Hawkes.
 - b. Telephone: 602/350-2660.
4. City of Tempe Public Works Department:
 - a. Contact Person: Howard Hargis.
 - b. Telephone: 602/350-8200.
5. Telephone Company: AT&T.
 - a. Contact Person: Blue Stake.
 - b. Telephone: 602/263-1100, or
 - c. Contact Person: Cable Hazard Center.
 - d. Telephone: 1-800-252-1133.
6. Telephone Company: MCI
 - a. Contact Person: Blue Stake.
 - b. Telephone: 602/263-1100, or
 - c. Contact Person: Fiber Security Department.
 - d. Telephone: 1-800-782-5348.
7. Cable TV Company: Cox Cable
 - a. Contact Person: Shawn Hawkins.
 - b. Telephone: 602/352-5860, extension 159.
8. Gas Company: Southwest Gas.
 - a. Contact Person: Howard Warren.
 - b. Telephone: 602/484-5235 or 602/271-4277.
9. Water Department: City of Phoenix Water Department:
 - a. Contact Person: 24-hour Emergency.
 - b. Telephone: 602/261-8000.
10. Nitrogen Company: Air Products.
 - a. Contact Person: Paul Sansoucy.
 - b. Telephone: 602/899-7700.
11. Electricity Company: Arizona Public Service.
 - a. Contact Person: Vicki Reynolds.
 - b. Telephone: 602/493-4433.
12. Flood Control: Flood Control District of Maricopa County.
 - a. Contact Person: Fred Fuller.
 - b. Telephone: 602/506-1501 or 602/506-4728.

- B. Railroad(s) serving the area at or near site:
 - 1. Railroad: Union Pacific Railroad.
 - a. Office Address: Denver, CO.

1.5 PROJECT MEETINGS

A. General:

- 1. RESIDENT ENGINEER: Schedule physical arrangements for meetings throughout progress of Work, prepare meeting agenda with OWNER and CONTRACTOR input and distribute with written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within 5 days after each meeting to participants and parties affected by meeting decisions.
- 2. Representatives of OWNER, CONTRACTOR, and Subcontractors shall attend meetings, as needed.

B. Preconstruction Conference:

- 1. CONTRACTOR shall be prepared to discuss the following subjects, as a minimum:
 - a. Required schedules.
 - b. Status of Bonds and insurance.
 - c. Sequencing of critical path work items.
 - d. Project changes and clarification procedures.
 - e. Use of site, access, office and storage areas, security and temporary facilities.
 - f. Major product delivery and priorities.
 - g. CONTRACTOR's safety plan and representative.
- 2. Attendees may include but not be limited to:
 - a. OWNER's representatives.
 - b. CONTRACTOR's office representative.
 - c. CONTRACTOR's resident superintendent.
 - d. CONTRACTOR's quality control representative.
 - e. Subcontractors' representatives whom CONTRACTOR may desire or RESIDENT ENGINEER may request to attend.
 - f. RESIDENT ENGINEER's representatives.
 - g. Others as appropriate.
 - h. Progress payment procedures.

C. Preliminary Schedules Acceptability Review Meeting: As set forth in the General Conditions.

D. Progress Meetings:

1. RESIDENT ENGINEER will schedule regular progress meetings at site, conducted weekly to review Work progress, progress schedule, Shop Drawing and Sample submissions schedule, Application for Payment, contract modifications, and other matters needing discussion and resolution.
2. Attendees will include:
 - a. OWNER's representative(s), as appropriate.
 - b. CONTRACTOR, Subcontractors, and Suppliers, as appropriate.
 - c. RESIDENT ENGINEER's representative(s).
 - d. Flood Control District's representative(s).
 - e. Others as appropriate.

E. Quality Control and Coordination Meeting(s):

1. Scheduled by RESIDENT ENGINEER on regular basis and as necessary to review test and inspection reports, and other matters relating to quality control of Work and work of other contractors.
2. Attendees will include CONTRACTOR, CONTRACTOR's designated quality control representative, selected Subcontractors and Suppliers, contractors responsible for other construction schedules, and RESIDENT ENGINEER's representatives.

F. Preinstallation Meetings:

1. When required in individual Specification sections, convene at site prior to commencing Work of that section.
2. Require attendance of entities directly affecting, or affected by, Work of that section.
3. Notify RESIDENT ENGINEER 4 days in advance of meeting date.
4. Provide suggested agenda to RESIDENT ENGINEER to include reviewing conditions of installation, preparation and installation or application procedures, and coordination with related Work and work of others.

G. Other Meetings: In accordance with Contract Documents and as may be required by OWNER and RESIDENT ENGINEER.**1.6 SEQUENCE OF WORK**

- A. Certain work, sequence, order, and direction is specified in Section 01310, PROGRESS SCHEDULES, Article SCHEDULE RESPONSIBILITIES. Compliance with this section is required to integrate the multiple construction activities scheduled to occur in this area. CONTRACTOR's construction schedule must conform to the requirements set forth in Section 01310, PROGRESS SCHEDULES, Article SCHEDULE RESPONSIBILITIES.

- B. Construct Work in stages to allow for OWNER's uninterrupted operation during construction. Coordinate construction schedule and operation with the OWNER.
- C. Be responsible for bypass facilities and temporary connections required to maintain OWNER's operations. Sequences other than those specified will be considered by RESIDENT ENGINEER, provided they afford equivalent continuity of operations.
- D. Power outages will be considered upon 48 hours written request to OWNER and RESIDENT ENGINEER. Describe the reason, anticipated length of time, and areas affected by the outage in its written request. Provide temporary provisions for continuous power supply to critical existing facility components if requested by OWNER and RESIDENT ENGINEER.
- E. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of OWNER's operations.
- F. Coordinate proposed Work with the RESIDENT ENGINEER and facility operations personnel before effecting unit shutdowns. Under no circumstances cease Work at the end of a normal working day if such actions may inadvertently cause a cessation of any facility operating process, in which case, remain onsite until necessary repairs are complete.
- G. Do not close lines, open valves, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after approval of OWNER and RESIDENT ENGINEER. Such actions will be considered by OWNER and RESIDENT ENGINEER upon 48 hours written notice to RESIDENT ENGINEER.

1.7 ADJACENT FACILITIES AND PROPERTIES

- A. Examination:
 - 1. After Effective Date of the Agreement and before Work at site is started, CONTRACTOR, RESIDENT ENGINEER, and affected property owners and utility owners shall make thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which might be damaged by construction operations. Periodic reexamination shall be jointly performed to include, but not limited to, cracks in structures, settlement, leakage, and similar conditions.
 - 2. Record observations for signature of RESIDENT ENGINEER and CONTRACTOR.

B. Documentation:

1. Submit two copies of photographs or other records documenting examination for RESIDENT ENGINEER's signature. RESIDENT ENGINEER will review, sign, and return one record copy of every observation document and photograph to CONTRACTOR to be kept on file in CONTRACTOR's field office as site records.
2. These observations and photographs are intended for use as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of CONTRACTOR's operations, and are for protection of adjacent property owners, CONTRACTOR, and OWNER.

1.8 OWNER FACILITIES

A. Operation and Shutdown of Existing Facilities:

1. Continuous operation of OWNER's facilities is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.
2. Conduct Work outside regular working hours on prior written consent of OWNER to meet Project schedule and avoid undesirable conditions.
3. Do not proceed with Work affecting a facility's operation without obtaining OWNER's advance approval of the need for and duration of such Work.
4. Provide 7 days advance request for approval to OWNER of need to shut down a process or facility.

B. Relocation of Existing Facilities:

1. During construction, it is expected that minor relocations of Work will be necessary.
2. Provide complete relocation of existing structures and Underground Facilities, including piping, utilities, equipment, structures, electrical conduit wiring, electrical duct bank, and other necessary items.
3. Use only new materials for relocated facility. Match materials of existing facility, unless otherwise shown or specified.
4. Perform relocations to minimize downtime of existing facilities.
5. Install new portions of existing facilities in their relocated position prior to removal of existing facilities, unless otherwise accepted by RESIDENT ENGINEER.

1.9 PHYSICAL CONDITIONS

- A. Exercise reasonable care to verify locations of existing subsurface structures and Underground Facilities.

- B. Thoroughly check immediate and adjacent areas subject to excavation by visual examination (and by electronic metal and pipe detection equipment, as necessary) for indications of subsurface structures and Underground Facilities.
- C. Make exploratory excavations where existing Underground Facilities or structures may potentially conflict with proposed Underground Facilities or structures. Conduct exploratory excavations in presence of RESIDENT ENGINEER and sufficiently ahead of construction to avoid possible delays to CONTRACTOR's Work.

1.10 REFERENCE POINTS AND SURVEYS

- A. Dimensions for lines and elevations for grades of structures, appurtenances, and utilities are indicated on Drawings, together with other pertinent information required for laying out Work. If conditions vary from those indicated, notify RESIDENT ENGINEER immediately, who will make minor adjustments required.
- B. Any existing survey points or other control markers destroyed without proper authorization will be replaced by owner of the survey points or control markers at the CONTRACTOR's expense.
- C. CONTRACTOR's Responsibilities:
 - 1. Locate and protect reference points prior to starting site preparation.
 - 2. Notify RESIDENT ENGINEER at least 3 working days in advance of time when grade and line to be provided by others will be needed.
 - 3. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
 - 4. In event of discrepancy in data or staking provided by RESIDENT ENGINEER, request clarification before proceeding with Work.
 - 5. Preserve and leave undisturbed control staking until RESIDENT ENGINEER has completed checks it deems necessary.
 - 6. Re-establish reference points resulting from destruction by CONTRACTOR's operations.
 - 7. Provide competent employee(s), tools, stakes, and other equipment and materials as RESIDENT ENGINEER may require to:
 - a. Check layout, survey, and measurement Work performed by others.
 - b. Measure quantities for payment purposes.
 - 8. Cooperate with RESIDENT ENGINEER so that checking and measuring may be accomplished with least interference to CONTRACTOR's operations.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION**3.1 CUTTING, FITTING, AND PATCHING**

- A. Cut, fit, adjust, or patch Work and work of others, including excavation and backfill as required, to make Work complete.
- B. Obtain prior written authorization of RESIDENT ENGINEER before commencing Work to cut or otherwise alter:
 - 1. Structural or reinforcing steel, structural columns or beams, elevated slabs, trusses, or any other structural member.
 - 2. Weather- or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Work of others.
- C. Refinish surfaces to provide an even finish.
 - 1. Refinish continuous surfaces to nearest intersection.
 - 2. Refinish entire assemblies.
 - 3. Finish restored surfaces to such planes, shapes, and textures that no transition between existing work and Work is evident in finished surfaces.
- D. Restore existing work, Underground Facilities, and surfaces that are to remain in completed Work including concrete-embedded piping, conduit, and other utilities as specified and as shown.
- E. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use best recommended practice of manufacturer or appropriate trade association.
- F. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.
- G. Remove specimens of installed Work for testing when requested by RESIDENT ENGINEER.

END OF SECTION

**SECTION 01092
ABBREVIATIONS****PART 1 GENERAL****1.1 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES**

- A. Reference to standards and specifications of technical societies and reporting and resolving discrepancies associated therewith shall be as provided in paragraph 3.3 of the General Conditions, and as may otherwise be required herein and in the individual Specification sections.
- B. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall meet the requirements or surpass the minimum standards of quality for materials and workmanship established by the designated standard or specification.
- C. Where so specified, products or workmanship shall also meet or exceed the additional prescriptive or performance requirements included within the Contract Documents to establish a higher or more stringent standard of quality than that required by the referenced standard.
- D. Where two or more standards are specified to establish quality, the product and workmanship shall meet or exceed the requirements of the most stringent.
- E. Where both a standard and a brand name are specified for a product in the Contract Documents, the proprietary product named shall meet or exceed the requirements of the specified reference standard.
- F. Copies of standards and specifications of technical societies:
 - 1. Copies of applicable referenced standards have not been bound in these Contract Documents.
 - 2. Where copies of standards are needed by the CONTRACTOR, obtain a copy or copies directly from the publication source and maintain in an orderly manner at the site as Work site records, available to the CONTRACTOR's personnel, Subcontractors, OWNER, and ENGINEER.

1.2 ABBREVIATIONS

- A. Abbreviations for trade organizations and government agencies: Following is a list of construction industry organizations and government agencies to which references may be made in the Contract Documents, with abbreviations used.

1.	AA	Aluminum Association
2.	AABC	Associated Air Balance Council
3.	AAMA	American Architectural Manufacturers Association
4.	AASHTO	American Association of State Highway and Transportation Officials
5.	ACI	American Concrete Institute
6.	AFBMA	Anti-Friction Bearing Manufacturers' Association
7.	AGA	American Gas Association
8.	AGMA	American Gear Manufacturers' Association
9.	AI	Asphalt Institute
10.	AISC	American Institute of Steel Construction
11.	AISI	American Iron and Steel Institute
12.	AITC	American Institute of Timber Construction
13.	ALS	American Lumber Standards
14.	AMA	Acoustical Materials Association
15.	AMCA	Air Movement and Control Association
16.	ANSI	American National Standards Institute
17.	APA	American Plywood Association
18.	API	American Petroleum Institute
19.	APWA	American Public Works Association
20.	AREA	American Railway Engineering Association
21.	ARI	Air Conditioning and Refrigeration Institute
22.	ASA	American Standards Association
23.	ASAE	American Society of Agricultural Engineers
24.	ASCE	American Society of Civil Engineers
25.	ASHRAE	American Society of Heating, Refrigerating and Air- Conditioning Engineers, Inc.
26.	ASNT	American Society for Nondestructive Testing
27.	ASME	American Society of Mechanical Engineers
28.	ASTM	American Society for Testing and Materials
29.	AWI	Architectural Wood Work Institute
30.	AWPA	American Wood Preservers' Association
31.	AWPB	American Wood Preservers Bureau
32.	AWPI	American Wood Preservers' Institute
33.	AWS	American Welding Society
34.	AWWA	American Water Works Association
35.	BHMA	Builders Hardware Manufacturers' Association
36.	CBMA	Certified Ballast Manufacturers' Association
37.	CDA	Copper Development Association
38.	CGA	Compressed Gas Association
39.	CIPRI	Cast Iron Pipe Research Institute
40.	CISPI	Cast Iron Soil Pipe Institute
41.	CMAA	Crane Manufacturers' Association of America
42.	CRSI	Concrete Reinforcing Steel Institute
43.	CS	Commercial Standard
44.	CSA	Canadian Standards Association
45.	CSI	Construction Specifications Institute

46.	CTSS	Caltrans Standard Specification
47.	EJCDC	Engineers Joint Contract Documents' Committee
48.	ETL	Engineering Test Laboratories
49.	FCC	Federal Communications Commission
50.	FEMA	Federal Emergency Management Agency
51.	FGMA	Flat Glass Marketing Association
52.	FM	Factory Mutual
53.	Fed. Spec.	Federal Specifications
54.	FS	Federal Specification
55.	GA	Gypsum Association
56.	HI	Hydraulic Institute
57.	HMI	Hoist Manufacturers' Institute
58.	ICBO	International Conference of Building Officials
59.	ICEA	Insulated Cable Engineers' Association
60.	IEEE	Institute of Electrical and Electronics Engineers, Inc.
61.	IES	Illuminating Engineering Society
62.	IFI	Industrial Fasteners Institute
63.	ISA	Instrument Society of America
64.	ISO	Insurance Service Office
65.	JIC	Joint Industry Conferences of Hydraulic Manufacturers
66.	MIA	Marble Institute of America
67.	Mil. Sp. or MIL	Military Specification
68.	MS	Military Specifications
69.	MMA	Monorail Manufacturers' Association
70.	NAAMM	National Association of Architectural Metal Manufacturers
71.	NACE	National Association of Corrosion Engineers
72.	NBHA	National Builders' Hardware Association
73.	NEBB	National Environmental Balancing Bureau
74.	NEC	National Electrical Code
75.	NECA	National Electrical Contractor's Association
76.	NEMA	National Electrical Manufacturers' Association
77.	NESC	National Electric Safety Code
78.	NFPA	National Fire Protection Association
79.	NHLA	National Hardwood Lumber Association
80.	NHPMA	Northern Hardwood and Pine Manufacturer's Association
81.	NLMA	National Lumber Manufacturers' Association
82.	NRCA	National Roofing Contractors Association
83.	NSF	National Sanitation Foundation Testing Laboratory
84.	NSPE	National Society of Professional Engineers
85.	NTMA	National Terrazzo and Mosaic Association
86.	NWWDA	National Wood Window and Door Association
87.	OECI	Overhead Electrical Crane Institute
88.	OSHA	Occupational Safety and Health Act (both Federal and State)

89.	PCI	Prestressed Concrete Institute
90.	PEI	Porcelain Enamel Institute
91.	PPI	Plastic Pipe Institute
92.	PS	Product Standards Section-U.S. Department of Commerce
93.	RMA	Rubber Manufacturers' Association
94.	SAE	Society of Automotive Engineers
95.	SCPRF	Structural Clay Products Research Foundation
96.	SDI	Steel Deck Institute
97.	SDI	Steel Door Institute
98.	SIGMA	Sealed Insulating Glass Manufacturing Association
99.	SJI	Steel Joist Institute
100.	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
101.	SPI	Society of the Plastics Industry
102.	SSPC	Steel Structures Painting Council
103.	SWI	Steel Window Institute
104.	TEMA	Tubular Exchanger Manufacturers' Association
105.	TCA	Tile Council of America
106.	UBC	Uniform Building Code
107.	UFC	Uniform Fire Code
108.	UL	Underwriters Laboratories Inc.
109.	UMC	Uniform Mechanical Code
110.	US	U.S. Bureau of Standards
111.	USBR	U.S. Bureau of Reclamation
112.	WCLIB	West Coast Lumber Inspection Bureau
113.	WWPA	Western Wood Products Association

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01300
SUBMITTALS****PART 1 GENERAL****1.1 GENERAL**

- A. Inquiries: Direct to RESIDENT ENGINEER regarding procedure, purpose, or extent of Submittal.
- B. Timeliness: Schedule and make submissions in accordance with requirements of individual Specification sections and in such sequence as to cause no delay in Work or in work of other contractors.
- C. Identification of Submittals:
 - 1. Complete, sign, and transmit with each Submittal package, one Transmittal of CONTRACTOR's Submittal Form.
 - 2. Identify each Submittal with the following numbering and tracking system:
 - a. Sequentially number each Submittal.
 - b. Resubmission of a Submittal will have original number with sequential alphabetic suffix.
 - 3. Format: Orderly, indexed with labeled tab dividers.
 - 4. Show date of submission.
 - 5. Show Project title and OWNER's contract identification and contract number.
 - 6. Show names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
 - 7. Identify, as applicable, Contract Document section and paragraph to which Submittal applies.
 - 8. Identify Submittal type; submit only one type in each Submittal package.
 - 9. Identify and indicate each deviation or variation from Contract Documents.
- D. Resubmissions: Clearly identify each correction or change made.
- E. Incomplete Submittal Submissions:
 - 1. RESIDENT ENGINEER will return the entire Submittal for CONTRACTOR's revision/correction and resubmission.
 - 2. Submittals which do not clearly bear CONTRACTOR's specific written indication of CONTRACTOR review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form

or as may otherwise be required will be returned to CONTRACTOR unreviewed.

- F. Nonspecified Submissions: Submissions not required under these Contract Documents and not shown on submissions will not be reviewed and will be returned to CONTRACTOR.
- G. RESIDENT ENGINEER's Review: RESIDENT ENGINEER will act upon CONTRACTOR's Submittal and transmit response to CONTRACTOR not later than 30 days after receipt, unless otherwise specified. Resubmittals will be subject to the same review time.
- H. Schedule Delays:
 - 1. No adjustment of Contract Times or Price will be allowed due to RESIDENT ENGINEER's review of Submittals, unless all of the following criteria are met:
 - a. CONTRACTOR has notified RESIDENT ENGINEER in writing that timely review of Submittal in question is critical to progress of Work, and has received RESIDENT ENGINEER's written acceptance to reflect such on current accepted submissions and progress schedule. Written agreement by RESIDENT ENGINEER to reduce Submittal review time will be made only for unusual and CONTRACTOR-justified reasons. Acceptance of a progress schedule containing Submittal review times less than specified or less than agreed to in writing by RESIDENT ENGINEER will not constitute RESIDENT ENGINEER's acceptance of the review times.
 - b. RESIDENT ENGINEER has failed to review and return first submission of a Submittal within agreed time indicated on current accepted schedule of submissions or, if no time is indicated thereon, within 30 days after receipt.
 - c. CONTRACTOR demonstrates that delay in progress of Work is directly attributable to RESIDENT ENGINEER's failure to return Submittal within time indicated and accepted by RESIDENT ENGINEER.
 - 2. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmission of Submittals, including multiple resubmissions.

1.2 SHOP DRAWINGS AND SAMPLES

A. Copies:

- 1. Shop Drawings and Product Data: Seven.
- 2. Samples: Three, unless otherwise specified in individual Specification sections.

- B. General: Submit to RESIDENT ENGINEER as required by individual Specification sections. RESIDENT ENGINEER will distribute to DESIGN ENGINEER for review.
- C. Identify and Indicate:
1. Pertinent Drawing sheet(s) and detail number(s), products, units and assemblies, and system or equipment identification or tag numbers.
 2. Critical field dimensions and relationships to other critical features of Work.
 3. Samples: Source, location, date taken, and by whom.
 4. Each deviation or variation from Contract Documents.
- D. Design Data: When specified, provide Project-specific information as required and as necessary to clearly show calculations, dimensions, logic and assumptions, and referenced standards and codes upon which design is based.
- E. Foreign Manufacturers: When proposed, include following additional information:
1. Names and addresses of at least two companies closest to Project that maintain technical service representatives.
 2. Complete inventory of spare parts and accessories for each piece of equipment.
- F. Preparation:
1. Format: Whenever possible, schedule for and combine Shop Drawings and Samples required for submission in each Specification section or division into a single Submittal package. Also combine product data for like items into a single Submittal package.
 2. Present in a clear and thorough manner and of sufficient detail to show kind, size, arrangement, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers shown on Drawings.
 3. Reproducible Copy:
 - a. Preferred Minimum Sheet Size: 8-1/2- by 11-inch and 11- by 17-inch pages, suitable for photocopying.
 - b. Larger than 11- by 17-Inch Sheets: 22-inch by 34-inch preferred, mylar or sepias suitable for copying in a blueprint machine.
 4. Piping Systems: Drawn to scale.
 5. Product Data: Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, dimensions and clearances required, wiring or piping diagrams and controls, and external connections, anchorages, and supports required.

6. Equipment and Component Titles: Identical to title shown on Drawings.
 7. Manufacturer's standard schematic drawings and diagrams as follows:
 - a. Modify to delete information that is not applicable to Work.
 - b. Supplement standard information to provide information specifically applicable to Work.
- G. Shop Drawing Disposition: DESIGN ENGINEER will review, mark, and stamp as appropriate and submit copies to RESIDENT ENGINEER. RESIDENT ENGINEER will distribute marked-up copies as noted:
1. Approved as Submitted (for incorporation in Work):
 - a. One copy furnished OWNER.
 - b. One copy retained in DESIGN ENGINEER's file.
 - c. One copy retained in RESIDENT ENGINEER's file.
 - d. Remaining copies returned to CONTRACTOR appropriately annotated.
 - e. CONTRACTOR may begin to implement activities to incorporate specific product(s) or Work covered by Submittal.
 2. Approved as Noted (for incorporation in Work):
 - a. One copy furnished OWNER.
 - b. One copy retained in DESIGN ENGINEER's file.
 - c. One copy retained in RESIDENT ENGINEER's file.
 - d. Remaining copies returned to CONTRACTOR appropriately annotated.
 - e. CONTRACTOR may begin to implement activities to incorporate product(s) or Work covered by Submittal, in accordance with ENGINEER's notations.
 3. Disapproved:
 - a. One copy furnished OWNER.
 - b. One copy retained in DESIGN ENGINEER's file.
 - c. One copy retained in RESIDENT ENGINEER's file.
 - d. Remaining copies returned to CONTRACTOR appropriately annotated.
 - e. CONTRACTOR shall make corrections or develop replacement and resubmit (in same manner and quantity as specified for original submission).
 - f. Submittal is not approved.
 4. Incomplete:
 - a. One copy furnished OWNER.
 - b. One copy retained in DESIGN ENGINEER's file.
 - c. One copy retained in RESIDENT ENGINEER's file.
 - d. Remaining copies returned to CONTRACTOR appropriately annotated.
 - e. CONTRACTOR shall complete and resubmit or submit missing portions.

f. Submittal is not approved.

H. Sample Disposition: Same as Shop Drawing disposition; samples will not be returned.

1.3 ADMINISTRATIVE SUBMITTALS

A. Copies: Submit six.

B. Description: Submittals that are not Shop Drawings or Samples, or that do not reflect quality of product or method of construction. May include, but not limited to those Submittals identified below.

C. Applications for Payment: Meet requirements of Section 01025, MEASUREMENT AND PAYMENT.

D. Progress Reports and Quantity Charts: As may be required in Section 01310, PROGRESS SCHEDULES.

E. Schedules:

1. Progress Schedule(s): Meet the requirements of Section 01310, PROGRESS SCHEDULES.

2. Schedule of Values: Meet requirements of Section 01025, MEASUREMENT AND PAYMENT.

3. Schedule of Submittal Submissions:

a. Prepare and submit, preliminary list of submissions grouped by Contract Document article/paragraph number or Specification section number, with identification, numbering and tracking system as specified under Paragraph Identification of Submittals and as approved by RESIDENT ENGINEER.

b. Include only the following required submissions:

1) Shop Drawings and Samples.

2) Record documents.

3) Specifically required certificates, warranties.

c. Coordinate with progress schedule and prepare submissions to show for each Submittal, at a minimum, the following:

1) Estimated submission date to RESIDENT ENGINEER.

2) Specifically requested and clearly identified RESIDENT ENGINEER review time if shorter than that set forth herein, with justification for such request and critical dates Submittals will be needed from RESIDENT ENGINEER.

3) For first 6-month period from the date the Contract Times commence or following any update or adjustment of the submissions, the estimated submission date shall be week, month, and year; for submissions beyond 6-month time period, show closest month and year.

- d. Submit to RESIDENT ENGINEER monthly (i) updated list if changes have occurred, otherwise submit a written communication confirming existing list, and (ii) adjusted submissions reflecting submission activity planned for forthcoming 6-month time period and beyond. Coordinate with progress schedule updates.
- F. Submittals Required by Laws, Regulations, and Governing Agencies:
1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
 2. Transmit to RESIDENT ENGINEER for OWNER's records one copy of correspondence and transmittals (to include enclosures and attachments) between CONTRACTOR and governing agency.
- G. Disposition: RESIDENT ENGINEER will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
1. Accepted:
 - a. Schedules: Acceptance will indicate that schedules provide for the orderly progression of the Work to completion within any specified milestones and the Contract Times, but such acceptance will neither impose on RESIDENT ENGINEER responsibility for the sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.
 - b. Acceptance of other Administrative Submittals will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - c. CONTRACTOR may proceed to perform Submittal related Work.
 - d. One copy furnished OWNER.
 - e. One copy retained in RESIDENT ENGINEER's file.
 - f. Remaining copies returned to CONTRACTOR appropriately annotated.
 2. Rejected as Noted:
 - a. One copy retained in RESIDENT ENGINEER's file.
 - b. Remaining copies returned to CONTRACTOR appropriately annotated.
 - c. CONTRACTOR shall revise/correct or develop replacement and resubmit.

1.4 QUALITY CONTROL SUBMITTALS

- A. Copies: Submit seven.

B. Certificates:

1. Manufacturer's Certificate of Compliance:
 - a. When specified in individual Specification sections or where products are specified to a recognized standard or code, submit prior to shipment of product or material to the site.
 - b. DESIGN ENGINEER may permit use of certain materials or assemblies prior to sampling and testing if accompanied by accepted certification of compliance.
 - c. Signed by product manufacturer certifying that materials, manufacture, and product specified conforms to or exceeds specified requirements and intent for which product will be used. Submit supporting reference data, affidavits, and certifications as appropriate.
 - d. May reflect recent or previous test results on material or product, but must be acceptable to DESIGN ENGINEER.
2. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual Specification sections.
3. Manufacturer's Certificate of Proper Installation: As required in Section 01640, MANUFACTURERS' SERVICES.

C. Statements of Qualification: Evidence of qualification, certification, or registration. As required in these Contract Documents to verify qualifications of professional land surveyors, engineers, materials testing laboratories, specialty Subcontractors, trades, specialists, consultants, installers, and other professionals.

D. Field Samples: Provide as required by individual Specifications and as may be required by RESIDENT ENGINEER during progress of Work.

E. Written Test Reports of Each Test and Inspection: As a minimum, include the following:

1. Date of test and date issued, Project title and number, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
2. Date and time of sampling or inspection and record of temperature and weather conditions.
3. Identification of product and Specification section, location of Sample, test or inspection in the Project, type of inspection or test with referenced standard or code, certified results of test.
4. Compliance with Contract Documents, and identifying corrective action necessary to bring materials and equipment into compliance.
5. Provide an interpretation of test results, when requested by RESIDENT ENGINEER.

- F. Disposition: DESIGN ENGINEER will review, mark, and stamp as appropriate and submit copies to RESIDENT ENGINEER. RESIDENT ENGINEER will distribute marked-up copies as noted:
1. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. CONTRACTOR may proceed to perform Submittal related Work.
 - c. One copy furnished OWNER.
 - d. One copy retained in DESIGN ENGINEER's file.
 - e. One copy retained in RESIDENT ENGINEER's file.
 - f. Remaining copies returned to CONTRACTOR appropriately annotated.
 2. Rejected as Noted:
 - a. One copy retained in DESIGN ENGINEER's file.
 - b. One copy retained in RESIDENT ENGINEER's file.
 - c. Remaining copies returned to CONTRACTOR appropriately annotated.
 - d. CONTRACTOR shall revise/correct or develop replacement and resubmit.

1.5 CONTRACT CLOSEOUT SUBMITTALS

- A. General: In accordance with Section 01700, CONTRACT CLOSEOUT.
- B. Disposition: RESIDENT ENGINEER will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
2. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. CONTRACTOR may proceed to perform Submittal related Work.
 - c. One copy furnished OWNER.
 - d. One copy retained in RESIDENT ENGINEER's file.
 - e. Remaining copies returned to CONTRACTOR appropriately annotated.
 2. Rejected as Noted:
 - a. One copy retained in RESIDENT ENGINEER's file.
 - b. Remaining copies returned to CONTRACTOR appropriately annotated.
 - c. CONTRACTOR shall revise/correct or develop replacement and resubmit.

1.6 SUPPLEMENTS

A. The supplements listed below, following "END OF SECTION", are part of this Specification.

1. Forms: Transmittal of CONTRACTOR's Submittal

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

CH2M HILL

TRANSMITTAL OF CONTRACTOR'S SUBMITTAL
(ATTACH TO EACH SUBMITTAL)

DATE: _____

TO: _____

Submittal No.: _____
 New Submittal Resubmittal
Previous Submittal No.: _____
Project: _____
Project No.: _____
Specification Section No.: _____

FROM: _____
Contractor

(Cover only one section with each transmittal)
Schedule Date of Submittal: _____

SUBMITTAL TYPE: Shop Drawing Administrative Sample
 Quality Control Contract Closeout "Or-Equal"/Substitute

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Spec. Para. No.	Drawing or Brochure Number	Contains Variation to Contract	
				No	Yes

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: _____
CONTRACTOR (Authorized Signature)

**SECTION 01310
PROGRESS SCHEDULES**

PART 1 GENERAL

1.1 SUBMITTALS

- A. Submit with Each Progress Schedule Submission:
1. CONTRACTOR's certification that progress schedule submission is the actual schedule being utilized for execution of the Work and certification by all Subcontractors with 5 percent or more of Work that they concur with CONTRACTOR's progress schedule submission.
 2. Four Legible Copies of the Progress Schedule: For each computer generated schedule submission.
 3. Disk file compatible with Primavera Project Planner (P3).
- B. Preliminary Progress Schedule: Submit within 10 days of award. No progress payment shall be made to CONTRACTOR until the schedules are submitted and acceptable to RESIDENT ENGINEER. Schedule shall comply with the requirements of MAG paragraph 108.4.
- C. Progress Schedule: Submit adjusted schedule or confirm validity of current schedule with each monthly Application for Payment, and at such other times as necessary to reflect: (i) progress of Work to within 5 working days prior to submission; (ii) changes in Work scope and activities modified since submission; (iii) delays in Submittals or resubmittals, deliveries, or Work; (iv) adjusted or modified sequences of Work; (v) other identifiable changes; and (vi) revised projections of progress and completion. Schedule shall comply with the requirements of MAG paragraph 108.4.
- D. Narrative Progress Report: Submit with each monthly submission of progress schedule.
- E. Precedent to final payment, provide four copies of any Critical Path Method (CPM) type schedule utilized with certification that said schedule represents correctly the way the Work was performed.
- F. Progress quantity chart(s).

1.2 SCHEDULE RESPONSIBILITIES

- A. Project is divided into several prime contracts with each contract awarded separately. OWNER's Construction Manager will be responsible for developing and maintaining a master progress schedule utilizing individual progress schedules prepared by each contractor as submitted to RESIDENT ENGINEER under this section.
- B. Upon review and acceptance, RESIDENT ENGINEER will transmit one hard copy and one diskette copy, Primavera Project Planner (P3), each for all contractors' schedules to OWNER's Construction Manager. Within 5 days of receipt, OWNER's Construction Manager shall prepare and transmit to RESIDENT ENGINEER one hard copy of master progress schedule for each designated contractor and one hard copy for RESIDENT ENGINEER.
- C. Where CONTRACTOR is referred to in the singular, it shall refer to each of separate contractors as applicable.

1.3 PROGRESS OF THE WORK

- A. If CONTRACTOR fails to complete activity by its latest scheduled completion date and this failure may extend Contract Times (or Milestones), CONTRACTOR shall, within 7 days of such failure, submit a written statement as to how CONTRACTOR intends to correct nonperformance and return to the acceptable current progress schedule. Actions by CONTRACTOR to complete Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.
- B. OWNER may order CONTRACTOR to increase plant, equipment, labor force or working hours if CONTRACTOR fails to: (i) complete a critical scheduled activity by its latest Milestone completion date, or (ii) satisfactorily execute Work as necessary to prevent delay to the overall completion of the Project.

1.4 PRELIMINARY PROGRESS SCHEDULE

- A. As a minimum, submit two bar charts or preliminary network analysis diagrams as follows:
 - 1. 90-Day Plan: Show major initial activities including, but not limited to, mobilization, permits, submittals for early product procurement and long lead time items, initial site work, and other activities anticipated in the first 90-day period of the Contract Time.
 - 2. Project Overview Plan: Show major components of the Work and the sequence relations between major components and subdivisions of major components. The chart shall indicate the relationship and time frames in which the various facilities will be made substantially

complete and placed into service in accordance with the Project Milestones. Sufficient detail shall be included for the identification of subdivisions of major components into such activities as:

- a. Excavation.
- b. Foundation subgrade preparation.
- c. Foundation shotcrete.
- d. Other important work for each major facility within the overall Work scope.

- B. Planned durations and start dates shall be indicated for each Work item subdivision. Each major component and subdivision component shall be accurately plotted on time scale sheets not to exceed 11 inches by 17 inches in size. Not more than four sheets shall be employed to represent this overview information.
- C. The preliminary progress schedule, when accepted by the RESIDENT ENGINEER, will be the initially acceptable schedule.

1.5 PROGRESS SCHEDULE

A. General:

1. Schedule(s) shall reflect Work logic sequences, restraints, delivery windows, review times, Contract Times, and Milestones set forth in the Agreement and Section 01040, COORDINATION, and shall begin with the date of Notice to Proceed and conclude with the date of Final Completion.
2. The schedule requirement herein is the minimum required. CONTRACTOR may prepare a more sophisticated schedule if such will aid CONTRACTOR in execution and timely completion of Work.
3. Base schedule on standard 5-day Work week.
4. When bar chart or network analysis schedules are specified, use Primavera Project Planner (P3) latest version or a compatible and approved software.
5. Adjust or confirm schedules on a monthly basis.
6. Float time is a Project resource available to both parties to meet contract Milestones and Contract Times.
7. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of OWNER and CONTRACTOR.
8. Pursuant to above float-sharing requirement, no time extensions will be granted nor delay damages paid until a delay occurs which (i) impacts

Project's critical path, (ii) consumes available float or contingency time, and (iii) extends Work beyond contract completion date.

9. If CONTRACTOR provides an accepted schedule with an early completion date, OWNER reserves the right to reduce Contract Times to match the early completion date by issuing a deductive Change Order at no change in Contract Price.

B. Format:

1. Comprehensive computer generated Network Analysis Diagram schedule using CPM, generally as outlined in Associated General Contractors of America (AGC) publication "The Use of CPM in Construction-A Manual for General Contractors and the Construction Industry," latest edition, prepared on reproducible paper, not larger than 30 inches by 42 inches.
 - a. Submit within 45 days after the Contract Times start to run.
 - b. Show complete interdependence and sequence of construction and Project-related activities reasonably required to complete the Work, identifying Work of separate stages and other logically grouped activities, and clearly identify critical path of activities.
 - c. Include at a Minimum: Subcontract Work; major and other equipment and critical product design, fabrication, testing, delivery and installation times including required lead time for OWNER-furnished products, move-in and other preliminary activities, Project closeout and cleanup, Substantial Completion dates, Submittals that may impact critical path, and system/subsystem/component testing, facility startup, and training activities that may impact critical path.
 - d. Develop subschedules to further define critical portions of the Work, i.e., Process Instrumentation and Control System/Subsystems.
 - e. Indicate dates for early- and late-start, early- and late-finish, float and duration.
 - f. No activity duration, exclusive of those for Submittals review and product fabrication/delivery, shall be less than 1 day nor more than 15 working days, unless otherwise approved by RESIDENT ENGINEER.
 - g. Activity duration for Submittals review shall not be less than review time specified unless clearly identified and prior written acceptance has been obtained from RESIDENT ENGINEER.
 - h. Monthly Schedule Submissions: Include overall percent complete, projected and actual; and percent completion progress for each listed activity.

- i. The estimated cost to perform each Work activity shall be noted for each activity in the network on a tabular listing. The sum of the costs assigned to all activities shall equal the Contract Price. No activity costs shall be assigned to Submittals or Submittal reviews. An unbalanced or front-end loaded schedule will not be acceptable. The accepted cost loaded progress schedule shall constitute the schedule of values specified in Section 01025, MEASUREMENT AND PAYMENT.

1.6 NARRATIVE PROGRESS REPORT

A. Include, as a minimum:

1. Summary of Work completed during the past period between Narrative Progress Reports.
2. Work planned during the next period.
3. Explanation of differences between summary of Work completed and Work planned in previously submitted Narrative Progress Report.
4. Current and anticipated delaying factors and their estimated impact on other activities and completion Milestones.
5. Corrective action taken or proposed.

1.7 CLAIMS FOR ADJUSTMENT OF CONTRACT TIMES

- ##### A.
- Where RESIDENT ENGINEER has not yet rendered formal decision on CONTRACTOR's claim for adjustment of Contract Times, and parties are unable to agree as to amount of adjustment to be reflected in progress schedule, CONTRACTOR shall reflect that amount of time adjustment in progress schedule as RESIDENT ENGINEER may accept as appropriate for the interim. It is understood and agreed that such interim acceptance by RESIDENT ENGINEER will not be binding and will be made only for purpose of continuing to schedule Work, until such time as formal decision as to an adjustment, if any, of the Contract Times acceptable to the RESIDENT ENGINEER has been rendered. CONTRACTOR shall revise progress schedule prepared thereafter in accordance with RESIDENT ENGINEER's formal decision.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SUBMITTALS

- A. Administrative Submittals: Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
- B. Shop Drawings:
 - 1. Temporary Utility Submittals:
 - a. Electric power supply and distribution plans.
 - b. Water supply and distribution plans.
 - c. Drainage plans.
 - 2. Temporary Construction Submittals:
 - a. Access Roads: Routes, cross-sections, and drainage facilities.
 - b. Parking area plans.
 - c. Storage yard and storage building plans, including gravel surfaced area.
 - d. Fencing and protective barrier locations and details.
 - e. Staging area location plan.
 - f. Traffic Routing Plans: As specified herein, and proposed revisions thereto.
 - g. Plan for maintenance of existing plant operations.
 - 3. Temporary Control Submittals:
 - a. Noise control plan.
 - b. Plan for disposal of waste materials and intended haul routes.

1.2 MOBILIZATION

- A. Mobilization shall include, but not be limited to, these principal items:
 - 1. Obtaining required permits.
 - 2. Moving CONTRACTOR's plant and equipment required for first month operations onto site.
 - 3. Installing temporary construction power, wiring, and lighting facilities.
 - 4. Providing onsite communication facilities, including telephones, fax machine, and mailing address.
 - 5. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
 - 6. Arranging for and erection of CONTRACTOR's work and storage yard.

7. Posting OSHA required notices and establishing safety programs and procedures.
 8. Having the CONTRACTOR's superintendent at the site full time.
 9. Maintain complete field file of Shop Drawings, posted Contract Documents, and other files of field operations including provisions for maintaining "As recorded Drawings."
 10. Removing field office from site upon acceptance of the entire work by OWNER.
- B. Use area designated for CONTRACTOR's temporary facilities as shown as the staging area on Drawings.

1.3 CONTRACTOR'S USE OF PREMISES

- A. Lands furnished by OWNER upon which CONTRACTOR shall perform the Work are as shown in the Drawings.
- B. Rights-of-way and easements for access to such lands furnished by OWNER have been acquired. One copy of each easement will be furnished to CONTRACTOR.
1. The Flood Control District of Maricopa County (FCDMC) maintains flood control maintenance easements within the river channel. The typical northern limit of the easement is 15 feet from the leading edge of the existing north channel levee and the typical southern limit is 15 feet from the leading edge of the existing south channel levee.
 2. CONTRACTOR is responsible for confining its construction equipment within the limits of the FCDMC easement except where specifically shown on the Drawings.

1.4 PERMITS

- A. Permits, Licenses, or Approvals: Obtain in accordance with the General Provisions and as otherwise may be provided in the Special Provisions and retain onsite.

1.5 PROTECTION OF WORK AND PROPERTY

- A. Safety Representative: CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- B. Comply with OWNER's safety rules.
- C. Keep OWNER informed of serious accidents on the site and related claims.

- D. Use of Explosives: No blasting or use of explosives will be allowed on the site.
- E. During the performance of the Work, CONTRACTOR is responsible for adapting its means, methods, techniques, sequences and procedures of construction to allow OWNER to maintain operation at the existing level of facility production and consistent with applicable permit requirements, and Laws and Regulations. In performing such Work and in cooperating with the OWNER to maintain operations, it may be necessary for the CONTRACTOR to plan, design, and provide various temporary services, utilities, connections, temporary piping and heating, access, and similar items which will be included within the Contract Price.

1.6 VEHICULAR TRAFFIC

- A. Traffic Routing Plan: Show sequences of construction affecting the use of roadways, time required for each phase of the Work, provisions for decking over excavations and phasing of operations to provide necessary access, and plans for signing, barricading, and striping to provide passages for pedestrians and vehicles.

PART 2 PRODUCTS

2.1 RESIDENT ENGINEER'S FIELD OFFICES

- A. To be provided by OWNER.

PART 3 EXECUTION

3.1 TEMPORARY UTILITIES

- A. Power:
 - 1. Determine the type and amount available and make arrangements for obtaining temporary electric power service, metering equipment, and pay all costs for the electric power used during the contract period, except for portions of the Work designated in writing by the RESIDENT ENGINEER as substantially complete.
 - 2. Cost of electric power used in performance and acceptance testing will be borne by CONTRACTOR.
- B. Lighting: Provide temporary lighting at least to meet all applicable safety requirements to allow erection, application or installation of materials and equipment, and observation or inspection of the Work.

C. Heating, Cooling, and Ventilating:

1. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials, equipment, and finishes from damage due to temperature or humidity.
2. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to dispense humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
3. Pay all costs of installation, maintenance, operation, removal, and fuel consumed.
4. Provide portable unit heaters, complete with controls, oil- or gas-fired, and suitably vented to outside as required for protection of health and property.
5. If permanent natural gas piping is used for temporary heating units, do not modify or reroute gas piping without approval of utility company. Provide separate gas metering as required by utility.

D. Water:

1. No construction or potable water is available at the site. CONTRACTOR shall make arrangements for and bear all costs of providing water required for construction and potable purposes during construction.
2. Hydrant Water:
 - a. Water may be available from hydrants in the Project vicinity. Order a fire hydrant meter from the City of Tempe Customer Service. Secure written permission for connection and use from the water department and meet requirements for use. Notify fire department before obtaining water from fire hydrants.
 - b. The City will install the fire hydrant meter, and the CONTRACTOR will pay for all water costs. The cost of water will be considered incidental to other bid items (See SUBSIDIARY WORK – G-13) and is \$1.09 per 1,000 gallons if a significant amount of water is utilized. For further information on water costs, please contact the City of Tempe Customer Service Division at 602/350-8361. Repair damaged hydrants and notify the appropriate agency as quickly as possible. Hydrants shall be completely accessible to the fire department at all times.
 - c. Include costs to connect and transport water to construction areas in the Contract Price.

E. Sanitary and Personnel Facilities: Provide and maintain facilities for CONTRACTOR's employees, Subcontractors, and all other onsite employer's employees. Service, clean, and maintain facilities and enclosures.

- F. Telephone Service: Arrange and provide onsite telephone service for CONTRACTOR's use during construction. Pay all costs of installation and monthly bills.
- G. Fire Protection: Furnish and maintain on the site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241).

3.2 PROTECTION OF WORK AND PROPERTY

A. General:

1. Perform Work within rights-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
2. Maintain in continuous service all existing gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along the line of work, unless other arrangements satisfactory to owners of said utilities have been made.
3. Where completion of Work requires temporary or permanent removal and/or relocation of an existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
4. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
5. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
6. In areas where the CONTRACTOR's operations are adjacent to or near a utility such as gas, telephone, television, electric power, water, sewer, or irrigation system and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection thereof have been made by the CONTRACTOR.
7. Notify property owners and utility offices which may be affected by the construction operation at least 2 days in advance.
 - a. Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to the CONTRACTOR's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
8. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures. Maintain original site drainage wherever possible.

9. Protect all existing facilities from damage. All damaged facilities shall be restored to original condition within 21 days.

B. Barricades and Lights:

1. Provide as necessary to prevent unauthorized entry to construction areas and affected roads, streets, and alleyways, inside and outside of fenced area, and as required to ensure public safety and the safety of CONTRACTOR's employees, other employer's employees, and others who may be affected by the Work.
2. Provide to protect existing facilities and adjacent properties from potential damage.
3. Locate to enable access by facility operators and property owners.
4. Protect streets, roads, highways, and other public thoroughfares that are closed to traffic by effective barricades with acceptable warning signs.
5. Locate barricades at the nearest intersecting public thoroughfare on each side of the blocked section.

C. Signs and Equipment:

1. Conform to requirements of the manual published by the Arizona Department of Transportation and the City of Tempe Traffic Control and Barricade Manual.
2. Use to alert general public of construction hazards, which would include surface irregularities, unramped walkways, grade changes, and trenches or excavations in roadways and in other public access areas.

D. Tree and Plantings:

1. Protect from damage and preserve trees, shrubs, and other plants outside the limits of the Work and within the limits of the Work which are designated on the Drawings to remain undisturbed.
 - a. Where practical, tunnel beneath trees when on or near the line of trench.
 - b. Employ hand excavation as necessary to prevent tree injury.
 - c. Do not stockpile materials or permit traffic within drip lines of trees.
 - d. Provide and maintain temporary barricades around trees.
 - e. Water vegetation as necessary to maintain health.
 - f. Cover temporarily exposed roots with wet burlap, and keep the burlap moist until soil is replaced around the roots.
 - g. No trees, except those specifically shown on Drawings to be removed, shall be removed without written approval of the RESIDENT ENGINEER.
 - h. Dispose of removed trees in a legal manner off the site.

2. In the event of damage to bark, trunks, limbs, or roots of plants that are not designated for removal, treat damage by corrective pruning, bark tracing, application of a heavy coating of tree paint, and other accepted horticultural and tree surgery practices.
 3. Replace each plant that dies as a result of construction activities.
- E. Existing Structures: Where CONTRACTOR contemplates removal of small structures such as signposts, and culverts that interfere with CONTRACTOR's operations, obtain approval of property owner and RESIDENT ENGINEER. Replace those removed in a condition equal to or better than original.
- F. Waterways: Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.
- G. Dewatering: Construct, maintain, and operate cofferdams, channels, flume drains, sumps, pumps, or other temporary diversion and protection works. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally safe removal and disposal of water from the various parts of the Work. Maintain the foundations and parts of the Work free from water.

3.3 TEMPORARY CONTROLS

A. Air Pollution Control:

1. Minimize air pollution from construction operations in accordance with the General Provisions.
2. Burning: Of waste materials, rubbish, or other debris will not be permitted on or adjacent to the site.
3. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in the construction area a dust-preventive treatment or periodically water to prevent dust. Strictly adhere to applicable environmental regulations for dust prevention.
4. Provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material. Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as the need no longer exists.

B. Noise Control:

1. Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.

2. Noise Control Plans: Proposed plan to mitigate construction noise impacts and to comply with noise control ordinances including method of construction, equipment to be used, and acoustical treatments.

C. Water Pollution Control:

1. Divert sanitary sewage and nonstorm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to an existing waterway.
2. Prior to commencing excavation and construction, obtain OWNER's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.
3. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning" and "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," and "Erosion and Sediment Control-Surface Mining in Eastern United States."
4. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.
5. CONTRACTOR shall comply with the requirements of the Arizona Department of Environmental Quality State Water Quality Certification provided in the Appendix.

D. Damage to New Work:

1. CONTRACTOR shall protect all new Work and Work in progress from stormwater inflow into Salt River Channel from any and all underground storm drain pipes which outfall into the river at or upstream the worksite location-worksite location being defined as the limits of the lake area. CONTRACTOR shall construct provide, maintain, and operate any and all temporary facilities necessary to control erosion and sediment associated with the stormwater flow in and throughout the aforementioned storm drain systems.
2. CONTRACTOR shall also be responsible for protecting, or insuring against damage to new Work and Work in progress for stormwater flows in Salt River Channel and Indian Bend Wash due to storm runoff or upstream water releases. CONTRACTOR shall be responsible for any and all loss or damage to new Work or Work in progress caused by flows originating upstream in the Salt River Channel or in Indian Bend Wash.

3. CONTRACTOR shall be required to obtain and maintain Builder Risk and Business Interruption insurance for the full term of the construction contract. Required insurance coverage shall include cost of replacing falsework, re-excavating worksite, and other actual damages to Work associated with this contract and shall also include home office or field office expenses and other expenses related to extended general conditions incurred by CONTRACTOR in conjunction with construction downtime due to unavailability of worksite resulting from sustained flows in the river channel.

3.4 STORAGE YARDS AND BUILDINGS

- A. Coordinate requirements with Section 01600, MATERIAL AND EQUIPMENT.
- B. Temporary Storage Yards: Construct temporary storage yards for storage of products that are not subject to damage by weather conditions.
- C. Temporary Storage Buildings:
 1. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials stored.
 2. Arrange or partition to provide security of contents and ready access for inspection and inventory.
 3. Store combustible materials (paints, solvents, fuels, etc.) in a well-ventilated and remote building meeting safety standards.

3.5 ACCESS ROADS

- A. The sole access to the construction area is by way of an existing driveway off of Rio Salado Parkway into the CONTRACTOR's designated staging and stockpile area. Access to the river bottom is possible using the existing access roads that parallel the south side of the river and which are located at the top of the cement stabilized alluvium (CSA) and the top of the levee. There are two existing ramps that connect the access roads and the river bed. When using access roads, CONTRACTOR shall be careful not to damage the existing underground well vaults. These vaults are designed for HS20 loading. During flood releases, the river bed may not be available as an access route. In addition, construction activities as a result of the work by other contractors (Schedules B and F) may result in one or more of the access roads being unavailable for an extended period of time. CONTRACTOR is responsible for constructing any other required access roads within the easements, rights-of-way, or Project limits, as shown. Alignments for new routes must be approved by RESIDENT ENGINEER.

- B. The existing bike paths will be closed to bike traffic throughout the construction period except the bike path on the north side of the river between Scottsdale Road and the Indian Bend Wash drop structure shall remain open unless construction operations make a temporary closure necessary. Closures shall be reviewed and approved by the City prior to implementation. CONTRACTOR shall not use the existing bike paths as access roads or operate any heavy equipment on the bike paths. CONTRACTOR shall not stockpile on top of any existing bike path. CONTRACTOR shall be responsible for protection of all bike paths from damage at all construction traffic crossings with fill material or other means in accordance with COT standards.
- C. CONTRACTOR shall provide a haul plan in accordance with the General Provisions.
- D. Maintain drainage ways. Install and maintain culverts to allow water to flow beneath access roads. Provide corrosion-resistant culvert pipe of adequate strength to resist construction loads.
- E. Provide gravel, crushed rock, or other stabilization material to permit access by all motor vehicles at all times.
- F. Maintain road grade and crown to eliminate potholes, rutting, and other irregularities that restrict access.
- G. Coordinate with RESIDENT ENGINEER detours and other operations affecting traffic and access. Provide at least 72 hours' notice to RESIDENT ENGINEER of operations that will alter access to the site.
- H. Upon completion of construction, restore ground surface disturbed by access road construction to original grade. Replace damaged or broken culverts with new culvert pipe of same diameter and material.

3.6 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, OWNER's operations, or construction operations.
- B. Provide parking facilities for personnel working on the Project.

3.7 VEHICULAR TRAFFIC

- A. All traffic control shall be in accordance with the City of Tempe Traffic Control and Barricade Manual, latest edition. All traffic control plans shall be reviewed by the City Transportation Division.

- B. Comply with Laws and Regulations regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by written permission of the proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.
- C. Conduct Work to interfere as little as possible with public travel, whether vehicular, bicycle, or pedestrian.
- D. Whenever it is necessary to cross, close, or obstruct roads, driveways, bike paths, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.
- E. In making street crossings, do not block more than one-half the street at a time. Whenever possible, widen the shoulder on the opposite side to facilitate traffic flow. Provide temporary surfacing on shoulders as necessary.
- F. Maintain top of backfilled trenches before they are paved, to allow normal vehicular traffic to pass over. Provide temporary access driveways where required. Cleanup operations shall follow immediately behind backfilling.
- G. When flaggers and guards are required by regulation or when deemed necessary for safety, furnish them with approved orange wearing apparel and other regulation traffic control devices.
- H. Notify the fire department and police department before closing street or portion thereof. Notify said departments when streets are again passable for emergency vehicles. Do not block off emergency vehicle access to consecutive arterial crossings or dead-end streets, in excess of 300 linear feet, without written permission from the fire department. Conduct operations with the least interference to fire equipment access, and at no time prevent such access. Furnish CONTRACTOR's night emergency telephone numbers to the police department. All street closures must be approved by the City of Tempe Transportation Division.
- I. Temporary Bridges:
 - 1. Construct temporary bridges at all points where maintenance of traffic across pipeline construction is necessary.
 - 2. Make bridges over bike paths, public streets, roads, and highways acceptable to the authority having jurisdiction thereover.
 - 3. Bridges erected over private roads and driveways shall be adequate for the service to which they will be subjected.
 - 4. Provide substantial guardrails and suitably protected approaches.
 - 5. Provide bicycle and foot bridges not less than 6 feet wide with handrails and uprights of dressed lumber.

6. Maintain bridges in place as long as the conditions of the Work require their use for safety of the public, except that when necessary for the proper prosecution of the Work in the immediate vicinity of a bridge, the bridge may be relocated or temporarily removed for such period as the RESIDENT ENGINEER may permit.

J. Coordination: Coordinate traffic routing with that of others working in the same or adjacent areas.

3.8 CLEANING DURING CONSTRUCTION

- A. In accordance with the General Provisions, as may be specified in Specification sections, and as required herein.
- B. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris. At least weekly, sweep all floors (basins, tunnels, platforms, walkways, roof surfaces), and pick up all debris and dispose.
- C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.
- D. At least weekly, brush sweep the entry drive and roadways, and all other streets and walkways affected by Work and where adjacent to Work.

END OF SECTION

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 GENERAL

1.1 SUBMITTALS

- A. Quality Control Submittals: Written procedures for maintaining and markup of record documents.
- B. Contract Closeout Submittals: Submit prior to application for final payment.
 - 1. Record Documents.
 - 2. Approved Shop Drawings and Samples.
 - 3. Special Bonds, Special Warranties, and Service Agreements.
 - 4. Consent of Surety to Final Payment.
 - 5. Releases or Waivers of Liens and Claims.
 - 6. Releases from Agreements.
 - 7. Final Application for Payment: Submit in accordance with procedures and requirements stated in Section 01025, MEASUREMENT AND PAYMENT.
 - 8. Spare Parts and Special Tools: As required by individual specification sections.

1.2 RECORD DOCUMENTS

- A. Quality Assurance:
 - 1. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain record documents.
 - 2. Accuracy of Records:
 - a. Coordinate changes within record documents, making legible and accurate entries on each page of Specifications and each sheet of Drawings and other documents where such entry is required to show change.
 - b. Purpose of Project record documents is to document factual information regarding aspects of Work, both concealed and visible, to enable future modification of Work to proceed without lengthy and expensive site measurement, investigation, and examination.
 - 3. Make entries within 24 hours after receipt of information that a change in Work has occurred.
 - 4. Prior to submitting each request for progress payment, request RESIDENT ENGINEER's review and approval of current status of record documents. Failure to properly maintain, update, and submit record documents may result in a referral by RESIDENT ENGINEER to

recommend the whole or any part of the CONTRACTOR's Application for Payment, either partial or final.

1.3 RELEASES FROM AGREEMENTS

- A. Furnish OWNER written releases from property owners or public agencies where side agreements or special easements have been made, or where CONTRACTOR's operations have not been kept within the OWNER's construction right-of-way.
- B. In the event CONTRACTOR is unable to secure written releases, inform the OWNER of the reasons:
 - 1. OWNER or its representatives will examine the site, and OWNER will direct CONTRACTOR to complete Work that may be necessary to satisfy terms of the easement.
 - 2. Should CONTRACTOR refuse to perform this Work, OWNER reserves the right to have it done by separate contract and deduct the cost of same from the Contract Price, or require the CONTRACTOR to furnish a satisfactory Bond in a sum to cover legal claims for damages.
 - 3. When OWNER is satisfied that Work has been completed in agreement with the Contract Documents and terms of easements, the right is reserved to waive the requirement for written release if:
 - (i) CONTRACTOR's failure to obtain such statement is due to the grantor's refusal to sign, and this refusal is not based upon any legitimate claims that CONTRACTOR has failed to fulfill the terms of the easement, or
 - (ii) CONTRACTOR is unable to contact or has had undue hardship in contacting the grantor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 MAINTENANCE OF RECORD DOCUMENTS

- A. General:
 - 1. Promptly following commencement of Contract Times, secure from RESIDENT ENGINEER at no cost to CONTRACTOR, one complete set of Contract Documents. Drawings will be full size.
 - 2. Delete RESIDENT ENGINEER title block and seal from all documents.
 - 3. Label or stamp each record document with title, "RECORD DOCUMENTS," in neat large printed letters.
 - 4. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.

B. Preservation:

1. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
2. Make documents and Samples available at all times for observation by RESIDENT ENGINEER.

C. Making Entries on Drawings:

1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
 - a. Color Coding:
 - 1) Green when showing information deleted from Drawings.
 - 2) Red when showing information added to Drawings.
 - 3) Blue and circled in blue to show notes.
2. Date entries.
3. Call attention to entry by "cloud" drawn around area or areas affected.
4. Legibly mark to record actual changes made during construction, including, but not limited to:
 - a. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
 - b. Horizontal and vertical locations of existing and new Underground Facilities and appurtenances, and other underground structures, equipment, or Work. Reference to at least two measurements to permanent surface improvements.
 - c. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
 - d. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
 - e. Changes made by Addenda Change Order, Written Amendment, and RESIDENT ENGINEER's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
5. Dimensions on Schematic Layouts: Show on record drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
 - a. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," and the like).
 - c. Make identification so descriptive that it may be related reliably to Specifications.

6. Specifications: Legibly mark and record for each product the description of actual product installed if differs from that specified, including:
 - a. Manufacturer, trade name, and catalog model number of each product and item of equipment actually installed.

3.2 FINAL CLEANING

- A. Immediately prior to CONTRACTOR's notice of completion, clean entire site or parts thereof, as applicable.
 1. Leave the Work and adjacent areas affected in a cleaned condition satisfactory to OWNER and RESIDENT ENGINEER.
 2. Remove grease, dirt, dust, paint or plaster splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces.
 3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
 4. Broom clean exterior paved driveways and parking areas.
 5. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
 6. Rake clean all other surfaces.
 7. Leave water courses, gutters, and ditches open and clean.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.

END OF SECTION

**SECTION 02140
DIVERSION AND CARE OF WATER**

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This section covers the Work necessary for removal of water from Work areas, diversion of river flow, and handling and removal of all other water during the entire construction period, complete.

1.2 SUBMITTALS

- A. Submittals shall be made in accordance with the requirements of this section.
- B. Weather Monitoring and Flood Warning Plan: Flood warning and weather advisory services are available through the Salt River Project, Flood Control District of Maricopa County, Arizona Department of Water Resources, and the National Weather Service. CONTRACTOR shall be responsible for coordinating with these and other appropriate agencies on a regular and timely basis to obtain available flood warning information for the Salt River and Indian Bend Wash. CONTRACTOR shall prepare a weather monitoring and flood warning plan for approval by the City prior to initiating activities within the Salt River floodplain.
- C. Diversion Plan: A water diversion and control plan shall be prepared which addresses the diversion of water in and under the Salt River around construction areas. Design of the diversion plan is the sole responsibility of CONTRACTOR. Prior to beginning any Work, and within 45 days after award of contract, CONTRACTOR shall submit a Certificate of Design for the Diversion Plan with the seal of CONTRACTOR's Engineer. This plan shall show proposed method for the diversion and care of water during construction. Following review by the DESIGN ENGINEER, OWNER, RESIDENT ENGINEER, and regulatory agencies, the CONTRACTOR shall address and incorporate any comments. The plan shall also include CONTRACTOR's method for removing equipment and materials from the river channel. The diversion plan shall be designed, stamped, signed, and certified by an independent professional consulting engineer, registered in the State of Arizona. CONTRACTOR's Engineer shall certify on a monthly basis that the diversion is constructed, operated, and maintained substantially in accordance with the design. System monthly certification shall be submitted on the 5th of each month.
- D. Handling and Removal Plan: A water handling and the removal plan shall be prepared which addresses the handling and removal of water from all sources that may impact construction. The Plan shall include descriptions of proposed

groundwater and surface water control facilities including, but not limited to, equipment; methods; standby equipment and power supply; pollution control facilities; discharge locations to be utilized; and provisions for immediate temporary water supply as required by this section. Drawings shall show locations, dimensions, and relationships of elements of each system. Design calculations shall be provided demonstrating adequacy of proposed dewatering systems and components. If the system is modified during installation or operation, revise or amend and resubmit Water Control Plan. Design of the water handling and removal plan is the sole responsibility of CONTRACTOR. Water shall be removed so Work can be performed in the dry as specified.

- E. Prior to beginning any Work on handling and removal of water from excavations and foundations, CONTRACTOR shall submit a Certificate of Design for the Handling and Removal Plan with the seal of CONTRACTOR's Engineer. The plan shall show proposed method for removal and disposal of water from excavations and foundations. The handling and removal plan shall be designed, stamped, signed, and certified by an independent professional consulting engineer registered in the State of Arizona. CONTRACTOR's Engineer shall certify on a monthly basis that the handling and removal of water is constructed, operated, and maintained substantially in accordance with the design. Monthly certification shall be submitted by the 5th of each month.
- F. Administrative Submittals:
1. Well permits.
 2. Water discharge permits if required.
- G. Quality Control Submittals:
1. Water Level Elevations Observed in Observation Wells: Submit same day measured.
 2. Settlement Benchmark Elevations: Submit weekly record.

1.3 CODES, ORDINANCES, AND STATUTES

- A. A contractor shall familiarize themselves with, and comply with, all applicable, codes, ordinances, statutes, and bear sole responsibility for the penalties imposed for noncompliance. CONTRACTOR shall allow 6 weeks to have the diversion plan reviewed by the RESIDENT ENGINEER and State and local agencies, and shall include the time for this review in his construction schedule.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION**3.1 MANAGEMENT OF RIVER FLOWS**

- A. CONTRACTOR shall construct and maintain all specified and necessary cutoffs, cofferdams, channels, flumes, drains, sumps, wells, pumps, and/or other temporary diversion and protection works necessary for diversion and handling and removal of all water to properly accomplish Work. Construct diversion across the river channel upstream of the facilities under construction in accordance with all Drawings and as necessary to protect the Work and to prevent damage to any existing facilities within and outside the river channel both upstream and downstream of the Work.
- B. CONTRACTOR shall conform to the regulations of the local and state agencies pertaining to passing the natural flow of the Salt River through the construction site and for measures required to do Work on the existing levees.
- C. Gap in the Facilities: If CONTRACTOR creates a gap in the facilities for the purpose of diversion of the river, the gap shall be constructed and filled as specified.

3.2 PASSING WATER OVER COMPLETED FACILITIES

- A. Temporarily passing water over completed portions of the facilities will be permitted, provided that completed Work is protected from damage, erosion, and contamination in a manner approved by CONTRACTOR's Engineer. Facilities over which flow has temporarily passed shall be cleaned up, contaminated material removed and placed and facilities repaired and suitably prepared to receive the next phase of Work.

3.3 DEWATERING SYSTEMS

- A. Provide, operate, and maintain dewatering systems of sufficient size and capacity to permit excavation and subsequent construction in dry, and to lower and maintain groundwater level a minimum of 2 feet below the lowest point of excavation. Continuously maintain excavations free of water, regardless of source, until backfilled to final grade.
- B. Design and Operate Dewatering Systems:
 - 1. To prevent settlement of ground as water is removed.
 - 2. To avoid inducing settlement or damage to existing facilities, completed Work, or adjacent property.
 - 3. To relieve artesian pressures and resultant uplift of excavation bottom.
- C. Provide sufficient redundancy in each system to keep excavation free of water in event of component failure.

- D. Provide 100 percent emergency power backup with automatic startup and switchover in event of electrical power failure.
- E. Provide supplemental ditches and sumps only as necessary to collect water from local seeps. Do not use ditches and sumps as primary means of dewatering.

3.4 CLEANUP

- A. After having served their purpose, all materials placed for temporary diversion and protection shall remain the property of CONTRACTOR and shall be removed from the site. Remove all cofferdams or other temporary diversion and protective so as not to interfere in any way with the operation or usefulness of the river channel. Remove, level, and grade all cofferdams or other temporary diversion and protective works constructed and not a part of the permanent facilities to the extent necessary to prevent obstruction in any degree whatever the flow of water in conformance with the Plans.

3.5 SETTLEMENT

- A. **Monitoring Dewatering-Induced Settlement:** Establish monuments for monitoring settlement at locations selected by RESIDENT ENGINEER. Monitor vertical movement of each settlement monument, relative to remote benchmark selected by RESIDENT ENGINEER, at frequency stated in CONTRACTOR's Dewatering Plan.

3.6 DISPOSAL OF WATER

- A. Treat water collected by dewatering operations, as required by regulatory agencies, prior to discharge.
- B. Discharge water as required by discharge permit and in manner that will not cause erosion or flooding, or otherwise damage existing facilities, completed Work, or adjacent property.
- C. Remove solids from treatment facilities and perform other maintenance of treatment facilities as necessary to maintain their efficiency.

3.7 PROTECTION OF PROPERTY

- A. Make assessment of potential for dewatering induced settlement. Provide and operate devices or systems including but not limited to reinjection wells, and infiltration trenches and cutoff walls necessary to prevent damage to existing facilities, completed Work, and adjacent property.

- B. Securely support existing facilities, completed Work, and adjacent property vulnerable to settlement due to dewatering operations. Support shall include, but not be limited to, bracing, underpinning, or compaction grouting.

3.8 RESPONSIBILITY OF CONTRACTOR

- A. CONTRACTOR shall be responsible for and shall repair at his expense any damage to the foundations, structures, or any other part of the work caused by natural floods, water, or failure of any part of the diversion or protective works. In the event the construction area is flooded, clean up and repair the damage and dry out or remove material in embankments deemed too wet or contaminated for proper fill material by RESIDENT ENGINEER, all at CONTRACTOR's expense. CONTRACTOR shall be responsible for, and shall repair at his expense, any damage to areas downstream of the construction site caused by failure of any part of the diversion or protective work. CONTRACTOR shall inspect, monitor, and repair diversion works to maintain them in safe condition.

3.9 HANDLING AND REMOVAL OF WATER

- A. CONTRACTOR shall furnish, install, maintain, and operate all necessary sumps, drains, ditches, pumps, equipment, and other facilities for removal of water from the various parts of the Work and maintain excavations and embankments free from water as necessary for constructing each part of the Work in the dry.
- B. Removal of Water from Excavations and Fill Areas:
 - 1. Drain or otherwise positively dewater borrow areas, embankment areas, structural excavations, trenches, foundation excavation, and other areas as necessary to permit satisfactory construction at all times. Where an excavation extends below the water table, dewatering shall be accomplished in a manner that will prevent loss of fines from the foundation, will maintain stability of the excavated slopes and bottom of the excavation, and will result in all construction operations being performed in the dry. The use of sufficient number of properly screened sumps, wells, or other equivalent methods will be necessary for dewatering. CONTRACTOR will also be required to control seepage along the bottom of the excavation, which may require pipe drains leading to sumps from which the water shall be pumped. Such pipe drains shall be of uniform diameter for each run, shall be provided with grout connections and returns at 50-foot intervals, and shall be embedded in reasonably well-graded gravel.
 - 2. During the placing and compacting of the fill material, the water level at every point in the excavation shall be maintained below the bottom of the excavation until the compacted material in the foundation

excavation has reached a depth of 10 feet, after which the water level shall be maintained at least 10 feet below the top of the compacted embankment. When the fill has been constructed to an elevation above the stabilized water level without pumping, the pipe drains and sumps, including surrounding gravel, shall be completely filled with grout composed of water, cement, and 5 percent bentonite. The grout mix shall be acceptable to RESIDENT ENGINEER. In no case shall a water cement ratio greater than 0.75 be used.

END OF SECTION

**SECTION 02205
EXCAVATION****PART 1 GENERAL****1.1 SUBMITTALS****A. Shop Drawings:**

1. Excavation Plan, Detailing:
 - a. Methods and sequencing of excavation.
 - b. Proposed locations of stockpiled excavated material.
 - c. Proposed onsite and offsite spoil disposal sites.
 - d. Reclamation of onsite spoil disposal areas.

1.2 QUALITY ASSURANCE

- A. Provide adequate survey control to avoid unauthorized overexcavation.

1.3 SEQUENCING AND SCHEDULING

- A. Remove all vegetation, rubbish, trash, junk, interfering or objectionable material lying or protruding above the ground surface prior to excavating.
- B. Dewatering: Conform to applicable requirements of Section 02140, DEWATERING, prior to initiating excavation.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION****3.1 GENERAL**

- A. Excavate to lines, grades, and dimensions shown and as necessary to accomplish Work. Excavate to within tolerance of plus or minus 0.50-foot except where dimensions or grades are shown or specified as maximum or minimum. Allow for working space, topsoil, and similar items, wherever applicable.
- B. Do not overexcavate without written authorization of ENGINEER.
- C. Remove or protect obstructions as shown and as specified in Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS, Article PROTECTION OF WORK AND PROPERTY.

3.2 UNCLASSIFIED EXCAVATION

- A. Excavation is unclassified. Complete all excavation regardless of the type, nature, or condition of the materials encountered.

3.3 CUT SLOPES

- A. Shape, trim, and finish cut slopes to conform with lines, grades, and cross-sections shown, with proper allowance for topsoil or slope protection, where shown.

3.4 STOCKPILING EXCAVATED MATERIAL

- A. Confine temporary stockpiles to within approved work areas. Do not obstruct roads or streets. Do not obstruct active work areas.
- B. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation sideslopes and excavation support systems are designed, constructed, and maintained for stockpile loads.
- C. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed Work, if weight of stockpiled material could induce excessive settlement.

3.5 DISPOSAL OF MATERIAL

- A. Dispose of excavated materials offsite.
- B. Dispose of debris resulting from removal of organic matter, trash, refuse, and junk offsite at permitted facilities in accordance with applicable laws.

END OF SECTION

**SECTION 02778
TEMPORARY CLAY LINING**

PART 1 GENERAL

1.1 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
1. American Society for Testing and Materials (ASTM):
 - a. D422, Method for Particle-Size Analysis of Soils.
 - b. D698, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cubic ft) (600 Kn-m/cubic meter).
 - c. D1556, Test Method for Density and Unit Weight of Soil In Place by the Sand-Cone Method.
 - d. D2216, Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures.
 - e. D2922, Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - f. D3017, Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - g. D4318, Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
 - h. D5084, Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
 - i. D4647, Test Method for Identification and Classification of Dispersive Clay Soils by Pinhole Test.

1.2 DEFINITIONS

- A. Atterberg Limits: Liquid limit, plastic limit, shrinkage limit, and plasticity index as determined by ASTM D4318.
- B. Clay Borrow: Natural clay material which meets requirements of this Specification and is excavated from offsite borrow areas.
- C. Grain Size: Determined by ASTM D422.
- D. Natural Clay: Fine-grained material having low permeability that is obtained from borrow areas (either onsite or offsite) and used as soil lining or cover without addition of admixtures.
- E. Natural Moisture Content: Determined by ASTM D2216.

- F. Optimum Moisture Content: Determined by ASTM D698.
- G. Relative Compaction: Ratio, in percent, of as-compacted field dry density to laboratory maximum dry density, as determined by ASTM D698.

1.3 SUBMITTALS

- A. Quality Control Submittals:
 - 1. Quality Control Plan.
 - 2. Laboratory Testing Equipment: Certified calibrations, manufacturer's product data, and test procedures.
 - 3. Certified test results.

1.4 QUALITY ASSURANCE PLAN

- A. Stormwater Control and Erosion Control Plans: In accordance with Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS.
- B. Independent Soils Testing Agency Qualifications: Certified in the State of Arizona with 10 years' experience in the field of soils testing required for this Project, and 2 years' experience in performing specified back pressure saturated permeability tests. Calibrated instruments and equipment, and documented standard procedures for performing specified testing.
- C. Identification and location of proposed clay borrow source(s).
- D. Source of water for compaction.
- E. Natural clay processing, compaction, and moisture control equipment, to include following as appropriate for each equipment type:
 - 1. Catalog and manufacturer data sheets.
- F. Moisture Control Plan: Method to prevent drying, cracking, saturation, or other damage prior to completion of the entire lining area.
- G. Test Fill Plan: Procedures, schedule, and diagrams.

PART 2 PRODUCTS

2.1 NATURAL CLAY MATERIAL

- A. Free from roots, organic matter, frozen material, debris, rocks, or slag larger than 1 inch, and other deleterious materials. Maximum in-place clod size shall be 1/2-inch.

- B. Thoroughly blended to provide homogeneous material relatively uniform in gradation and moisture content throughout.
- C. Gradation: Material having 100 percent by weight passing 1-foot sieve, 80 percent by weight passing U.S. No. 4 sieve and at least 40 percent by weight passing U.S. No. 200 sieve.
- D. Liquid Limit: 30 minimum to 70 maximum.
- E. Plasticity Index: 20 to 50.
- F. Laboratory Permeability: Maximum 1×10^{-6} centimeters per second when remolded to a relative compaction greater than 95 percent..
- G. Dispersivity: Soil shall be classified nondispersive as determined by ASTM D4647.

2.2 WATER FOR COMPACTION AND PERMEABILITY TESTING

- A. Clean and uncontaminated.

2.3 SOURCE QUALITY CONTROL

- A. Provide services of independent soils testing agency.
- B. General:
 - 1. Presence of any compound above EPA and/or acceptable limits will be reason to reject source, regardless of other test results.
 - 2. Do not deliver imported natural clay material to site until proposed clay borrow source and clay materials tests have been tentatively accepted in writing by ENGINEER.
 - 3. Obtain Samples taken across each natural clay source area, to proposed source depth, taking into account variability of soils within source for tests that include gradation (Atterberg Limits, natural moisture content, moisture-density relationship, dispersivity, and permeability tests).
 - 4. Perform tests as necessary to locate and confirm an acceptable source of imported material, and as specified in Article FIELD QUALITY CONTROL.
 - 5. During construction conduct grain size, natural moisture content, Atterberg Limits, dispersion, and moisture-density relationship tests on a minimum of every 5,000 cubic yards of material or change in material type (whichever is greater) obtained from borrow source(s).
 - 6. If tests conducted indicate that natural clay material does not meet specified requirements, terminate material placement until corrective measures are taken. Remove and replace material which does not conform to specified requirements.

C. Permeability Testing:

1. Prepare Samples taken from proposed borrow source by compacting test specimens to 95 percent relative compaction at moisture content within range of optimum moisture to 2 percent above optimum.
2. During construction, conduct permeability test on a minimum of every 8,000 cubic yards or change in material type (whichever is greater).
3. Use same type and source of water in permeability tests as is added during construction, or as acceptable to ENGINEER.
4. Perform constant head triaxial permeability tests in accordance with ASTM D5084, to measure permeability of natural clay material.
 - a. Trim test specimens to length-to-diameter ratio of 0.5 to 1.3.
 - b. Sheath specimens in latex membrane, placed in triaxial cell, consolidated under an average effective confining pressure of 2 to 3 psi, subjected to back pressure sufficient to saturate specimen, and permeated under hydraulic gradient less than 30 across specimen.
 - c. Monitor inflow and outflow volumes and rates. Record time and flow data for at least 1 day beyond time when inflow rate equals outflow rate, at which time pressures may be relieved and physical measurements of specimens obtained for calculations.

PART 3 EXECUTION**3.1 BORROW AREA OPERATIONS**

- A. Excavate natural clay material in an orderly manner to avoid inclusion of sand, silt, or other unacceptable material and to thoroughly mix natural clay material.
- B. Remove rocks, roots, sticks, debris, or other deleterious materials by screening or other method.
- C. In addition, process material by pulverizing and screening clay material if necessary to produce uniform, homogeneous material that can be compacted to requirements of these Specifications.

3.2 EQUIPMENT

- A. Clay Processing Equipment:
 1. Of type and sufficient size to process natural clay to meet requirements for maximum clod size and to provide homogeneous blended material.
 2. Consisting of rotovator, discs, or screens.

B. Compaction Equipment:

1. Use equipment that provides kneading action, such as wobble-wheeled roller, padfoot, or sheepsfoot roller.
2. Of suitable type and adequate to obtain densities specified.
3. To provide satisfactory breakdown of materials to form dense homogeneous fill free of visible voids.
4. Maintained and operated in condition that will deliver manufacturer's rated compactive effort.
5. Use sheepsfoot tine lengths that do not pull clay up from finished surface.
6. If adequate densities are not obtained, provide additional larger, different types of equipment.

C. Moisture Control Equipment:

1. Use equipment for applying water of type and quality adequate for Work, that does not leak, and equipped with distributor bar or other device to assure uniform application.
2. Use equipment for mixing and drying out material consisting of blades, discs, or other equipment.

3.3 SUBGRADE PREPARATION

- A. Prepare and compact subgrade in accordance with Section 03362, TEMPORARY LINING.

3.4 TEST FILL

- A. Construct in accordance with test fill plan, as specified in this section:

1. Subgrade Preparation: For one, 30-foot by 200-foot test pad.
2. Construct natural clay test pads, thickness as shown for temporary clay lining.
 - a. Moisture Content: At 2 percent above optimum moisture content.
 - b. Number of compactor passes to achieve specified compaction for each lift per accepted test fill plan.
 - c. Maximum compacted lift thickness: 6 inches.
 - d. Allow sufficient space for compaction equipment to attain full operating speed prior to passing over pad in any direction.
3. Excavate at least four holes, each 3 feet square, through each completed pad for observation, sampling, and testing of compacted material.

- B. Demonstrate following:

1. Soil screening and pulverizing procedures for properly processing clay prior to compaction.

2. Moisture content of clay at time of compaction.
3. Lift thicknesses, compaction procedures, and number of passes for proposed compaction equipment.
4. Dry unit weight achieved and measured by field density testing.
5. Permeability of compacted test fill material.

3.5 INSTALLATION

- A. Start after successful completion of test fill, using procedures determined optimal based on test fill test results, and after subgrade preparation.
- B. Place natural clay after preparation of subgrade in maximum loose 8-inch lifts.
- C. Remove sand or silt inclusions and replace with natural clay material.
- D. Compact clay to minimum density of 95 percent relative compaction at moisture content range of optimum moisture specified below.
- E. Overlap joints between adjacent clay panels at least 5 feet.
- F. Exposed Surfaces: Compact to protect clay from moisture changes, loss, or gain.
- G. If clay becomes cracked or becomes softened due to moisture changes, scarify full depth of lift with rotovator, adjust moisture content to that specified below, and recompact as previously specified.
- H. Final Surface: Final compaction pass shall be made with rubber-tired roller. Surface should be free from tine or roller marks, holes, depressions more than 1/2-foot deep, or protrusions extending above surface more than 2 inches.
- I. Clay Lining Minimum Thickness: As shown.

3.6 MOISTURE CONTROL

- A. Implement Moisture Control Plan.
- B. Add water at borrow source or stockpile to achieve required moisture content. Disk blade or otherwise mix at stockpile to achieve uniform moisture.
- C. During compacting operations, maintain moisture content in each lift of natural clay material within range of optimum to plus 3 percentage points above optimum.
- D. If too dry, add water to material by sprinkling fill, then mixing to make moisture content uniform throughout lift.

- E. If too wet, aerate material by blading, discing, harrowing, or other methods, to hasten drying process.

3.7 TOLERANCES

- A. Construct temporary clay lining with at tolerance of 0.0 to plus 0.5 foot of thickness shown.

3.8 FIELD QUALITY CONTROL

A. Field Density and Moisture Content Tests:

1. Perform at frequency of two tests for each test fill pad and one for each 20,000 square feet of clay lining placement.
2. Determine in-place density and moisture content by any one or combination of following methods: ASTM D2922, D3017, D1556, D2216, or other methods acceptable to ENGINEER. If nuclear gauge method (ASTM D2922) is used to determine in-place density, moisture content readings shall be calibrated for clay with at least two oven-dried moisture content tests each day.
3. If compaction tests indicate density or moisture content is not as specified, terminate material placement and take corrective action prior to continuing placement.

B. Grain Size and Atterberg Limit Tests: As specified in Article NATURAL CLAY MATERIAL.

C. Back Pressure Saturated Permeability Tests:

1. Perform on undisturbed Samples obtained with Shelby tube after compaction of temporary clay lining is complete, at frequency of two tests for each test fill pad and one test for each 2 acres of lining placement.
2. Test Samples in flexible wall perimeter using back pressure saturation in accordance with ASTM D5084.
3. If permeability is greater than 1×10^{-5} cm/sec, excavate *defective* areas and reconstruct to meet permeability and density requirements.

D. Clay Liner Acceptance: Based on certified test results made on completed Work or on Samples of material taken from completed layer.

3.9 PROTECTION OF WORK

- A. Do not route or allow construction traffic on top of natural clay layer once material has been placed and compacted.

3.10 MOISTURE CONTROL MAINTENANCE (ALTERNATIVE B DEDUCTIVE OPTION)

- A. Maintain completed sections of lining near optimum moisture to prevent drying, cracking, or saturation until entire lining is complete and accepted by OWNER.

END OF SECTION

**SECTION 03362
TEMPORARY SHOTCRETE LINING**

PART 1 GENERAL

1.1 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
1. American Concrete Institute (ACI): 506.2, Specification for Materials, Proportioning, and Application of Shotcrete.
 - a. C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - b. C33, Standard Specification for Concrete Aggregate.
 - c. C39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - d. C88, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
 - e. C94, Standard Specification for Ready-Mixed Concrete.
 - f. C150, Standard Specification for Portland Cement.
 - g. C173, Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - h. C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - i. C260, Standard Specification for Air-Entraining Admixtures for Concrete.
 - j. C457, Standard Test Method for Microscopical Determination of Parameters of the Air-Void system in Hardened Concrete.
 - k. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as Mineral Admixture in Portland Cement Concrete.
 - l. C1012, Standard Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution.
 - m. C1140, Standard Practice for Preparing and Testing Specimens from Shotcrete Test Panels.

1.2 DEFINITIONS

- A. Shotcrete: Mixture of cement, water, and aggregates pumped through a hose and projected at high velocity by jet upon intended surface.
- B. Rebound: Wet shotcrete which bounces off a surface against which it is projected. Rebound materials will not be used nor incorporated into the Work.

- C. MAG: Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction.

1.3 SUBMITTALS

- A. Product data for admixtures.
- B. Shop Drawings:
 - 1. Product Data: Admixtures.
 - 2. Design Data: Shotcrete mix designs signed by qualified mix designer.
 - 3. Gradation for coarse and fine aggregates, and combined together. List gradings, percent passing through each sieve size.
 - 4. Detailed description of equipment and plan for placement of temporary lining.
- C. Quality Control Submittals:
 - 1. Manufacturer's Written Instructions: Project-specific instructions for mix, mixing, application of shotcrete, and curing.
 - 2. Manufacturers' Certificate of Compliance:
 - a. Portland cement.
 - b. Admixtures.
 - c. Fly ash.
 - d. Aggregates.
 - 3. Admixtures: Manufacturers' Certificate of Proper Installation.
 - 4. Test Reports:
 - a. Admixtures, test reports showing chemical ingredients and percentage of chloride in each admixture and fly ash.
 - b. Source test analysis report for fly ash.
 - c. Statement identifying aggregates reactivity. Showing total chloride in each component of aggregates utilizing grinding to 50-mesh screen and determination of total chloride. Use Florida DOT method.
 - d. For each trial mix design and signed by qualified mix designer.
 - e. Cylinder test results from laboratory mixes.
 - f. Concrete shrinkage test results.
 - 5. Concrete Delivery Tickets:
 - a. For each batch of concrete before unloading at site.
 - b. Record of drum revolution counter, type, brand, test certification, and amount of fly ash if used in accordance with ASTM C94, Section 16.
 - 6. Statements of Qualification:
 - a. Nozzleman.
 - b. Gunman.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Nozzleman:

- a. Minimum 2 years' experience on shotcreting work similar to Project.
- b. Capable of applying thin coats of Shotcrete, even and uniformed thickness.

2. Gunman: Minimum 6 months' experience with handling gun for work similar to Project.

3. Do not include experience gained on swimming pool and ditch construction.

- B. Temporary Lining Test Section: A test section of the temporary lining shall be constructed by the CONTRACTOR at a location determined by the RESIDENT ENGINEER. The test section shall be a minimum of 10,000 square feet in area and of sufficient size to demonstrate the CONTRACTOR's proposed methods. The test section shall be incorporated into the final temporary lining. The CONTRACTOR shall demonstrate the quality, efficiency, and workability of all materials and equipment necessary for uninterrupted construction of the temporary lining. CONTRACTOR shall use personnel on the test section who will be working directly on, or directly supervising work on the temporary lining installation. The test section shall be completed a minimum of 14 days prior to the temporary lining installation.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect aggregates with tarpaulins or polyethylene sheets at all times.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Wind:

1. Do not apply temporary lining shotcrete under strong wind conditions, as evidenced by removal of a large amount of cement and moisture from mortar spray between nozzle and application surface.
2. Place shields around nozzleman to minimize loss of cement carried away by wind.

B. Cold Weather Application:

1. Surfaces shall not be frozen, outdoor temperature during day shall be expected to rise to at least 40 degrees F, and night temperature following shotcrete application shall not be expected to drop below 33 degrees F.

2. Take precaution to protect shotcrete areas by keeping surface temperature of shotcrete above 33 degrees F until curing is complete.
 3. Remove and replace shotcrete that has frozen.
 4. Use thermometers to verify surface temperature during curing period.
- C. Rain: Remove and replace new Shotcrete damaged by rain.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cement: ASTM C150, Type II, except for total alkali content when determined as mixed sulfates of sodium, potassium, and sodium oxide shall not exceed 0.6 of 1 percent.
- B. Aggregates: Furnish from one source.
1. Natural Aggregates: Free from deleterious coatings and substances in accordance with ASTM C33, except as modified herein.
 2. Aggregate Soundness: Test for fine and coarse aggregates in accordance with ASTM C33 and ASTM C88 using sodium sulfate solution.
 3. Fine Aggregates:
 - a. Clean, sharp, natural sand.
 - b. ASTM C33.
 - c. Materials Passing 200 Sieve: 4 percent maximum.
 - d. Limit deleterious substances in accordance with ASTM C33, Table 1 with material finer than 200 sieve limited to 3 percent, coal and lignite limited to 0.5 percent.
 4. Coarse Aggregate:
 - a. Natural gravels, combination of gravels and crushed gravels, crushed stone, or combination of these materials containing no more than 15 percent flat or elongated particles (long dimension more than five times the short dimension).
 - b. ASTM C33, Table 2, Size No. 8.
 - c. Materials Passing 200 Sieve: 0.5 percent maximum.
- C. Admixtures: Furnish from one manufacturer.
1. Characteristics: Compatible with each other and free of chlorides or other corrosive chemicals.
 2. Air-Entraining Admixture:
 - a. Manufacturer and Product: W. R. Grace & Co., Cambridge, MO; Durofill, Flowable Fill Additive.
 - b. Concrete with air-entrainment admixture added shall maintain air percentage as batched, within plus or minus 2 percent for time required for placement into structure.

3. Pozzolan (Fly Ash): Class F fly ash in accordance with ASTM C618, Table 1 and 2, except as modified herein:
 - a. Loss on Ignition: Maximum 3 percent.
 - b. Water Requirement: Maximum 100 percent of control.
 - c. $\frac{CaO(\%) - 5}{FE_2O_3(\%)}$: Maximum 1.5
 - d. ASTM C618, Table 1A apply when aggregates or portion of coarse or fine aggregates used are reactive as specified under paragraph Aggregates.
 - e. ASTM C618, Table 2A, Reactivity with Cement Alkalies, apply when aggregates or portions of aggregates are reactive as specified under paragraph Aggregates.
 - f. ASTM C618, Table 2A, Uniformity Requirements, apply when loss on ignition of fly ash furnished exceeds 3 percent.
4. For fly ash not meeting the requirements of the chemical ratio listed above, furnish the following:
 - a. Test fly ash in accordance with ASTM C1012.
 - b. Furnish test data confirming fly ash in combination with cement used meets strength requirements and is compatible with air-entraining agents and other additives.

2.2 WATER

- A. Clean and potable containing less than 500 ppm of chlorides, free from oil, acid, alkali, organic matter, and other deleterious substances.

2.3 PROPORTIONING AND MIXING

A. General:

1. Strength minimum of 75 psi (f'c) at 28 days, unless otherwise shown.
2. Weight measuring equipment and tolerances in accordance with ASTM C94. Do not measure by volume.

B. Wet Mix Process:

1. Each cubic yard of temporary lining shotcrete shall consist of minimum 100 pounds portland cement, 300 pounds fly ash, 2,260 pounds moist aggregate, and 1 durofill capsule.
2. Temporary lining shotcrete shall have a slump between 6 and 9 inches and total volumetric air content 14 percent plus or minus 1 percent before placement as determined by ASTM C173 or ASTM C231. Air-entraining agents in accordance with ASTM C260 and ASTM C457.
3. Mix Shotcrete in either stationary plant, portable batch type, or truck mixers.

4. Consideration will be given to alternate mix designs to accommodate the CONTRACTOR's installation equipment.

PART 3 EXECUTION

3.1 PREPARATION OF EXISTING RIVER BED

- A. Prepare site only after adequate erosion and sediment controls are in place.
- B. Remove all vegetation, rubbish, trash, junk, interfacing, or objectionable materials lying on or protruding above the ground surface.
- C. Rough grade riverbed and level out all ridges or holes.
- D. Compact the subgrade to a firm condition using a minimum of at least one complete pass of a vibratory compactor capable of providing at least 20,000 foot-pounds of compactive energy.
- E. Wet surface until damp and remove free moisture.

3.2 APPLICATION EQUIPMENT

- A. Control discharge of mixed materials into hose and deliver continuous smooth stream of uniformly mixed material free from slugs at velocity to discharge from nozzle.
- B. Wet Mix Process:
 1. Automated Delivery Equipment:
 - a. Equipment parts available for regular inspection and replacement as required.
 - b. Air compressor capacity, minimum 400 cfm of air available at nozzle, excluding air supplied simultaneously for other purposes.

3.3 TEMPORARY LINING PLACEMENT

- A. General:
 1. Apply temporary lining shotcrete in accordance with ACI 506.2.
 2. Apply shotcrete utilizing wet or dry mix process.
 3. Increase cement content if shotcrete fails to meet 28-day strength of at least 75 psi.
 4. If flow of shotcrete becomes intermittent, direct away from Work until flow becomes constant.
 5. Apply shotcrete at total thickness shown on the Drawings.

B. Rebound Removal:

1. Protect adjacent concrete, other surfaces, and equipment from being damaged by overshooting Shotcrete. Remove overshoot shotcrete and deposited rebound materials as Work proceeds.
2. Do not work rebound into shotcrete.

C. Nozzle Position:

1. Keep nozzle at uniform constant distance from surface, always ensuring a right-angle spray of material to surface.
2. Apply shotcrete material wet enough to ensure no buildup of shotcrete to prevent voids.

3.4 WATER CURING

- A. Curing shall not cause erosion of shotcrete.
- B. Cure shotcrete for a period of 7 days. Maintain shotcrete surfaces wet to the touch at all times during curing period.
- C. Do not membrane cure shotcrete.

3.5 FIELD QUALITY CONTROL

- A. **Wet Mix Process:** Where automated wet mix equipment is used, take shotcrete cylinders from mixer or ready-mix truck and make, core, and test in accordance with ASTM C31 and ASTM C39.
- B. Use of data obtained from impact hammers, ultrasonic equipment, or nondestructive testing devices is not permitted. However, these devices may be used for determining uniformity of shotcrete.
- C. Remove and replace shotcrete found not meeting tests, or cut cores and further test shotcrete, or repair and replace as approved by ENGINEER.
- D. Temporary lining shotcrete evaluation will be based on results obtained from cylinders in accordance with ASTM C1140 and the MAG Specifications Sections 725.10 and 725.11. Not less than four core cylinder specimens shall be taken and tested at 28 days for each 100 cubic yards of shotcrete. The amount of cylinder may be reduced by the RESIDENT ENGINEER.

END OF SECTION

PROPOSAL

Place: Tempe, Arizona

Date: _____

Mayor and City Council
City of Tempe
Tempe, Arizona 85281

In compliance with your invitation for bids and all conditions of the Contract

Documents, the _____,
a corporation organized under the laws of the State of _____,

a partnership consisting of _____,

or individual trading as _____,

of the City of _____, hereby proposes and agrees to furnish any and all plant, materials, labor, construction equipment, service and transportation (all applicable taxes included) of the **RIO SALADO TOWN LAKE TEMPORARY LINING-SCHEDULE E (PROJECT NO. 946523E)** and to install the material therein for the Owner in a good and workmanlike and substantial manner and to the satisfaction of the Owner, or their properly authorized agents and strictly pursuant to and in conformity with the Contract Documents and other documents that may be made by the Owner or their properly authorized agents, as provided herein, at the following prices:

SCHEDULE E BID LIST

The following are the bid items for Schedule E:

Extended Total Amount and Base Bid Extended Total must not include any Arizona State, City of Tempe, or Maricopa County privilege (sales) tax. Arizona State, City of Tempe, and Maricopa County privilege (sales) taxes shall be calculated and added to the Base Bid Extended Total in accordance with the following formulas to determine the total bid:

Base Bid Extended Total x 65% x State Rate (5%) = Sales Tax

Base Bid Extended Total x 65% x City Rate (1.7%) = City Tax

Base Bid Extended Total x 65% x County (.75%) = County Tax

Bidder may elect to submit a bid for either one of the following alternatives, or both:

Alternative A – Temporary Shotcrete Lining:

Item	Description	Quan.	Unit	Unit Price	Extended Total Amount
1.	Mobilization/Demobilization	1	LS	\$	\$
2.	Diversion and Care of Water and Miscellaneous Items	1	LS	\$	\$
3.	Temporary Shotcrete Liner	606,000	SY	\$	\$
TOTAL OF EXTENDED AMOUNT				\$	\$

State Sales Tax (5%) \$ _____

Tempe Sales Tax (1.7%) \$ _____

County Sales Tax (.75%) \$ _____

TOTAL BID WITH TAXES \$ _____

Alternative B – Temporary Clay/Shotcrete Lining:

Item	Description	Quan.	Unit	Unit Price	Extended Total Amount
1.	Mobilization/Demobilization	1	LS	\$	\$
2.	Diversion and Care of Water and Miscellaneous Items	1	LS	\$	\$
3.	Temporary Shotcrete Liner	37,200	SY	\$	\$
4.	Temporary Clay Liner	569,700	SY	\$	\$
TOTAL OF EXTENDED AMOUNT				\$	\$

State Sales Tax (5%) \$ _____

Tempe Sales Tax (1.7%) \$ _____

County Sales Tax (.75%) \$ _____

TOTAL BASE BID WITH TAXES \$ _____

Alternative B – Deductive Option – Moisture Control Maintenance of Clay Lining:

Bidder further proposes that if OWNER elects to omit the Moisture Control Maintenance required for the temporary clay liner as described in the Specifications based on undersigned's own estimate of quantities and cost, the Contract Price will be reduced in the amount of:

_____ Dollars

and _____ Cents \$ _____

Proposal - continued

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

The Undersigned understands that the City of Tempe reserves the right to award a contract or to reject all bids and to waive any informalities in any bid, deemed to be in the best interests of the City.

NOTICE: THIS CONTRACT CONTAINS AN EXCLUSIVE AND MANDATORY ALTERNATIVE DISPUTE RESOLUTION PROCESS FOR THE EFFICIENT AND EXPEDITIOUS RESOLUTION OF ALL CLAIMS WHICH MAY ARISE FROM THIS CONTRACT AND OTHER CONTRACTS CONTAINING THESE PROVISIONS FOR THE PROJECT.

Performance shall start within ten (10) days after receiving the Notice to Proceed, and the Project will be completed within ninety (90) consecutive calendar days after receiving the Notice to Proceed.

The Undersigned hereby acknowledges receipt of the following Addenda:

_____ and his bid has been adjusted to reflect any changes.

The Contractor shall sign in the space indicated below and have signature attested

Respectfully submitted,

(Name) (Signature)

(Title)

Contractor's License No.

Federal I.D. No./Social Security No.

ATTEST:

(Name)

(Title)

Witness: If Bidder is an Individual

Certified to be a true and exact copy

Karen M. Laufer, Records Specialist

(Corporate Seal)

(Company Name)

Address: _____

Phone: _____

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 1998, by and between the City of Tempe, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Arizona, 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 as the **CONTRACTOR**:

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

ARTICLE I - SCOPE OF THE WORK: The Contractor shall furnish any and all plant, materials, labor, construction equipment, services and transportation (all applicable taxes included) required for performing all work for the installation of the

**RIO SALADO TOWN LAKE TEMPORARY LINING-SCHEDULE E
PROJECT NO. 946523E**

for the sum of _____ (\$_____), 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 or his properly authorized agents and strictly pursuant to and in conformity with the Specifications and Plans for the above referenced project(s) 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 "Notice to Contractor", "Special Provisions", "Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction", as amended by the City of Tempe, "Proposal", "Plans", together with "Bid Security", "Performance Bonds", "Payment Bond", and Addenda thereto, if any.

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 the construction of said improvements and to construct the same and install the material therein, as called for by this Agreement free and clear in all claims, liens, and charges whatsoever, in the manner and under the conditions specified within the time stated in the Proposal.

Contract - continued

IN WITNESS WHEREOF, three (3) identical counterparts of this Contract, each of which shall be for all purposes, be deemed an original thereof, have been duly executed by the parties hereinabove named, on the date and year first herein written.

CITY OF TEMPE
a Municipal Corporation

Name

Title

ATTEST:

Authorized Officer

Official Title

(Corporate Seal)

APPROVED AS TO FORM:

City Attorney

CONTRACTOR:

Party of the Second Part

Name

Title

City of Tempe Transaction Privilege
License Permit No.

ATTEST:

Name

Title

Certified to be a true and exact copy

Karen M. Laufer, Records Specialist

(Corporate Seal)

Witness: If Contractor is an Individual

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), are held and firmly bound unto _____ (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____, to complete Project No. 946523E 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 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: _____

**

SURETY SEAL

BY: _____

AGENCY ADDRESS

****Surety hereby acknowledges they are licensed to do business in the State of Arizona****

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 held and firmly bound unto _____ (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____, to complete Project No. 946523E 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 of 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 having been required of the said Principal in order to comply with the provision of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, all rights and 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 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: _____

**

SURETY

SEAL

BY: _____

AGENCY ADDRESS

****Surety hereby acknowledges they are licensed to do business in the State of Arizona****

CITY OF TEMPE
TEMPE, ARIZONA
DEPARTMENT OF PUBLIC WORKS

CONTRACTOR'S AFFIDAVIT
REGARDING
SETTLEMENT OF CLAIMS

_____, Arizona

Date _____

PROJECT: RIO SALADO TOWN LAKE TEMPORARY LINING-SCHEDULE E
PROJECT NO. 946523E

To the City of Tempe, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of \$ _____, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project against the City of Tempe. The undersigned further agrees to indemnify and save harmless the City of Tempe against any and all liens, claims of liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____, 19____.

Contractor

By: _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to me before this _____ day of _____, 19____.

Notary Public

My Commission Expires

APPENDIX

US COE Section 404 Permit

Arizona Department of Environmental Quality State Water Quality
Certification

Arizona Department of Water Resources Dam Safety

Arizona Department of Water Resources Recovery Well Permit

Arizona Department of Transportation Permit (Not Included)

Flood Control District of Maricopa County

Union Pacific Railroad Company

Arizona Public Service

Salt River Project (Not Included)

DEPARTMENT OF THE ARMY PERMIT

Permittee:

City of Tempe
City Engineer's Office
Mr. Howard Hargis
P.O. Box 5002
Tempe, Arizona 85280

Permit Number: 94-40904-00-CJL

Issuing Office: Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To construct the City of Tempe's 200 acre Rio Salado Town Lake as shown on the attached drawings. Activities within the waters of the United States include construction of an upstream and downstream air-inflatable rubber dam, foundations, energy dissipating structures, slurry wall installations, channel grading, material storage during construction, and a stormwater detention/riparian area.

Project Location: In the Salt River between Priest Drive and McClintock Drive, at (Sections 14, 15, and 16, T1N, R4E), Tempe, Maricopa County, Arizona.

Permit Conditions

General Conditions:

1. The time limit for completing the authorized activity ends on April 22, 1998. If

you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

Special Conditions: See attached sheet.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- () Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).
- () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application

proves to have been false, incomplete, or inaccurate (See 4 above).

- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Howard C. Hargis
(PERMITTEE)

4/21/95
(DATE)

Assistant City Engineer
Howard C. Hargis, P.E., Assistant City Engineer

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Diane K. Noda
Diane K. Noda
Acting Chief, Regulatory Branch
(for the District Engineer)

4 May 1995
(DATE)

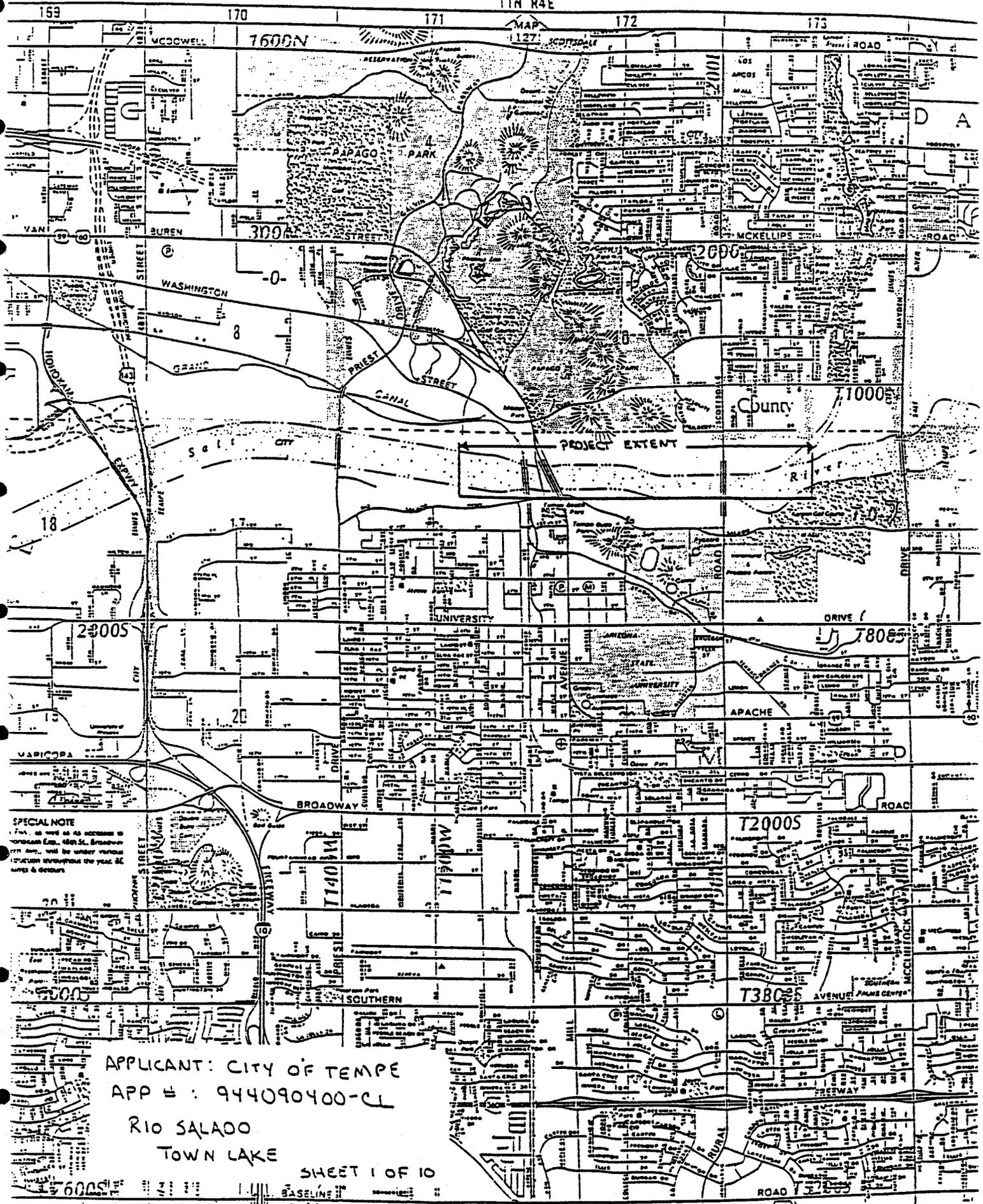
When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEEE)

(DATE)

SPECIAL CONDITIONS
PERMIT NO. 94-40904-00-CJL

1. The permittee shall abide by the terms and conditions of the attached letter of water quality certification issued by the Arizona Department of Environmental Quality on March 13, 1995.



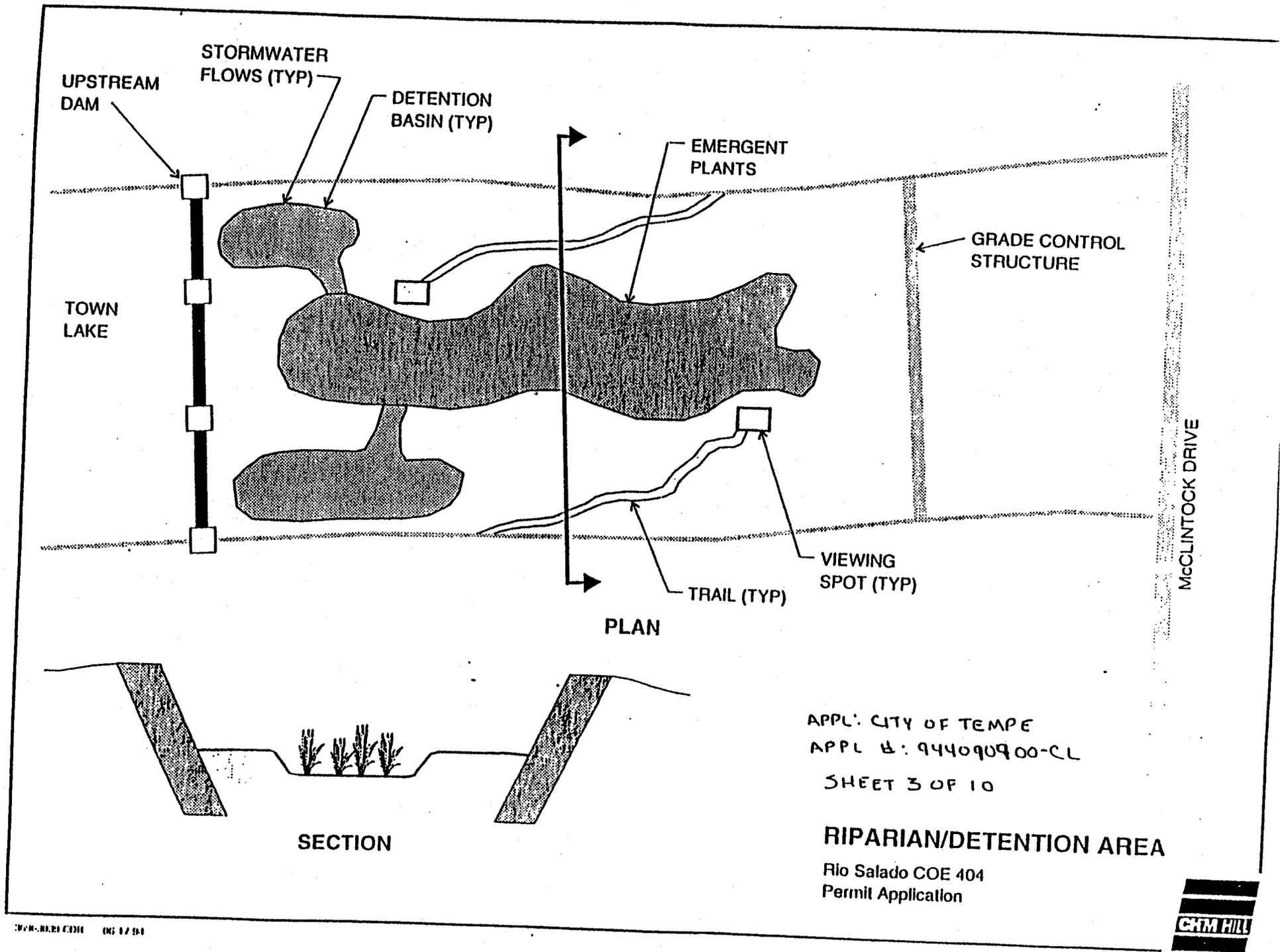
SPECIAL NOTE
 This map is not to be used as a substitute for a survey. It is intended for general information only. The City of Tempe is not responsible for any errors or omissions on this map.

APPLICANT: CITY OF TEMPE

APP # : 944090400-CL

RIO SALADO
 TOWN LAKE

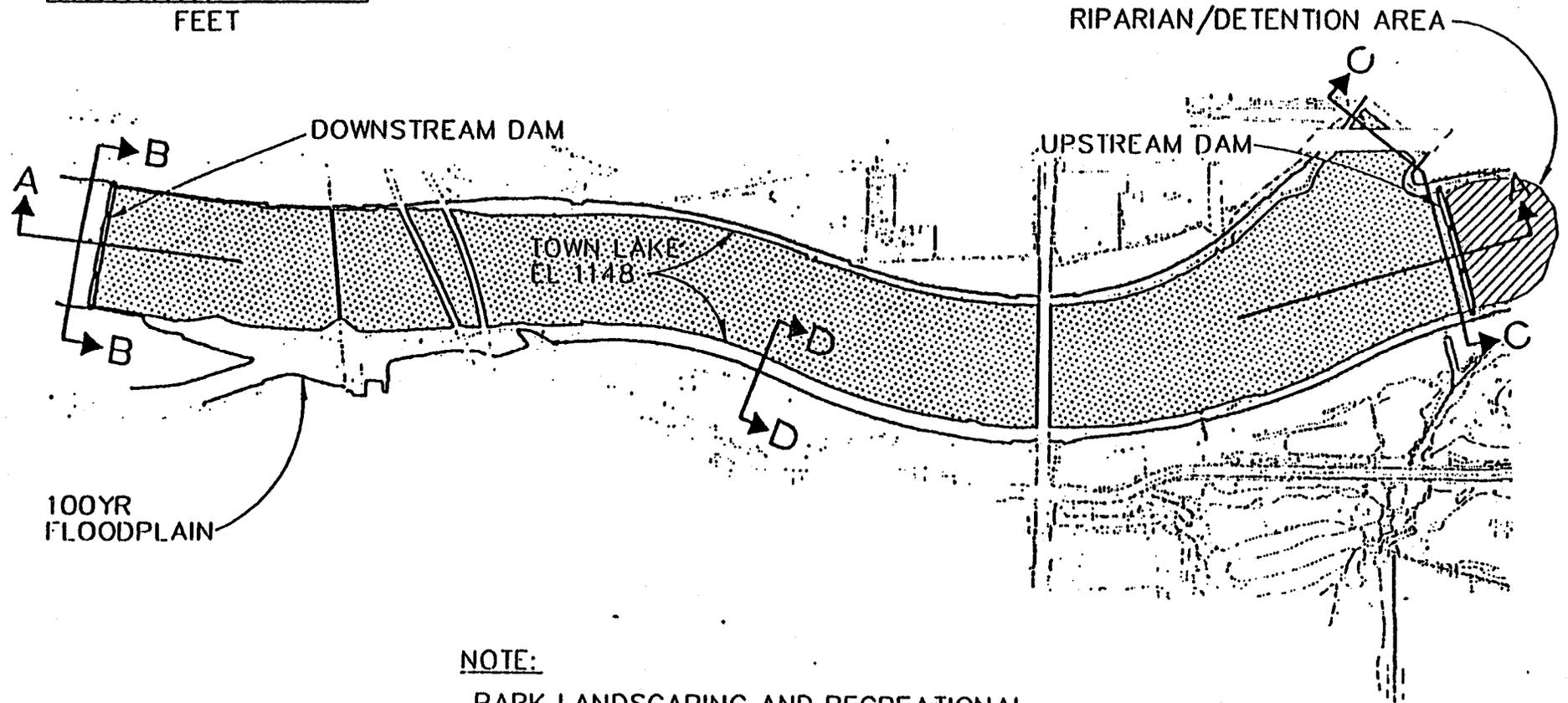
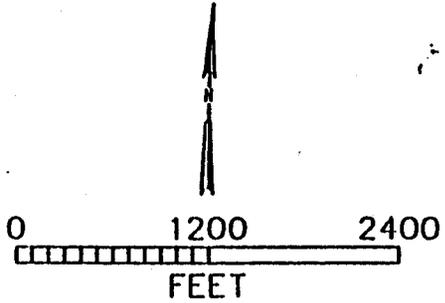
SHEET 1 OF 10



APPL: CITY OF TEMPE
 APPL #: 944090900-CL
 SHEET 3 OF 10

RIPARIAN/DETENTION AREA
 Rio Salado COE 404
 Permit Application





NOTE:

PARK LANDSCAPING AND RECREATIONAL AREAS WILL BE CREATED AROUND THE PERIMETER OF THE LAKE.

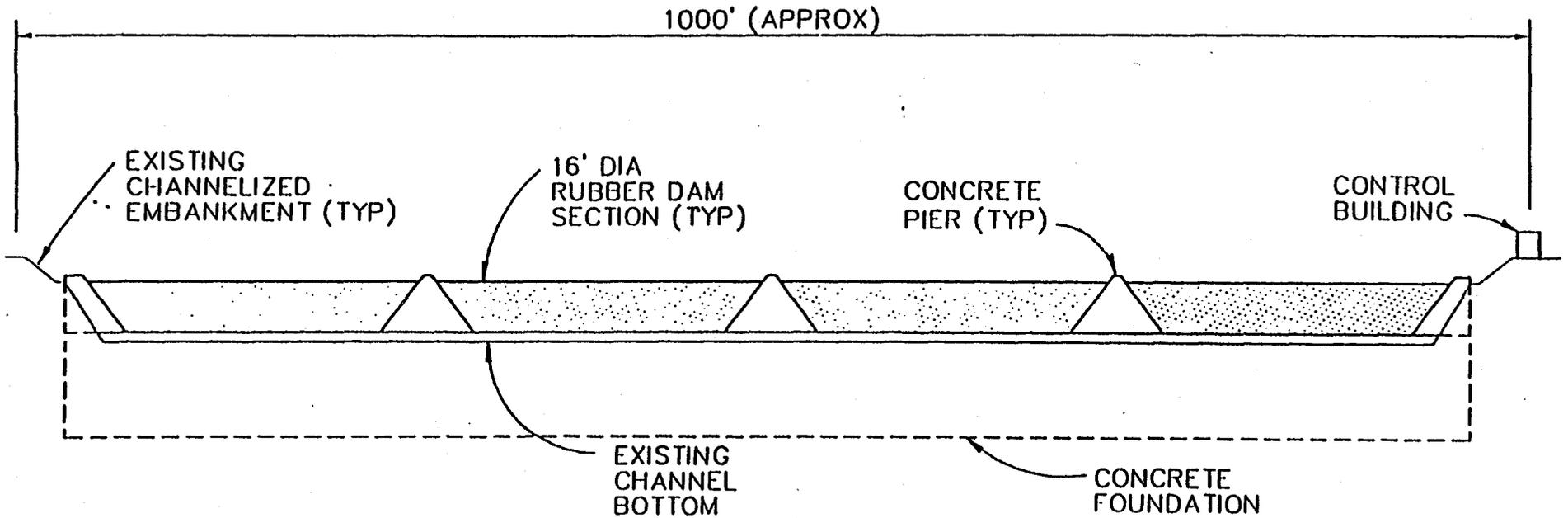
APPL: CITY OF TEMPE
APPL #: 944090400-CL

SHEET 5 OF 10

TOWN LAKE PLAN

RIO SALADO COE 404
PERMIT APPLICATION





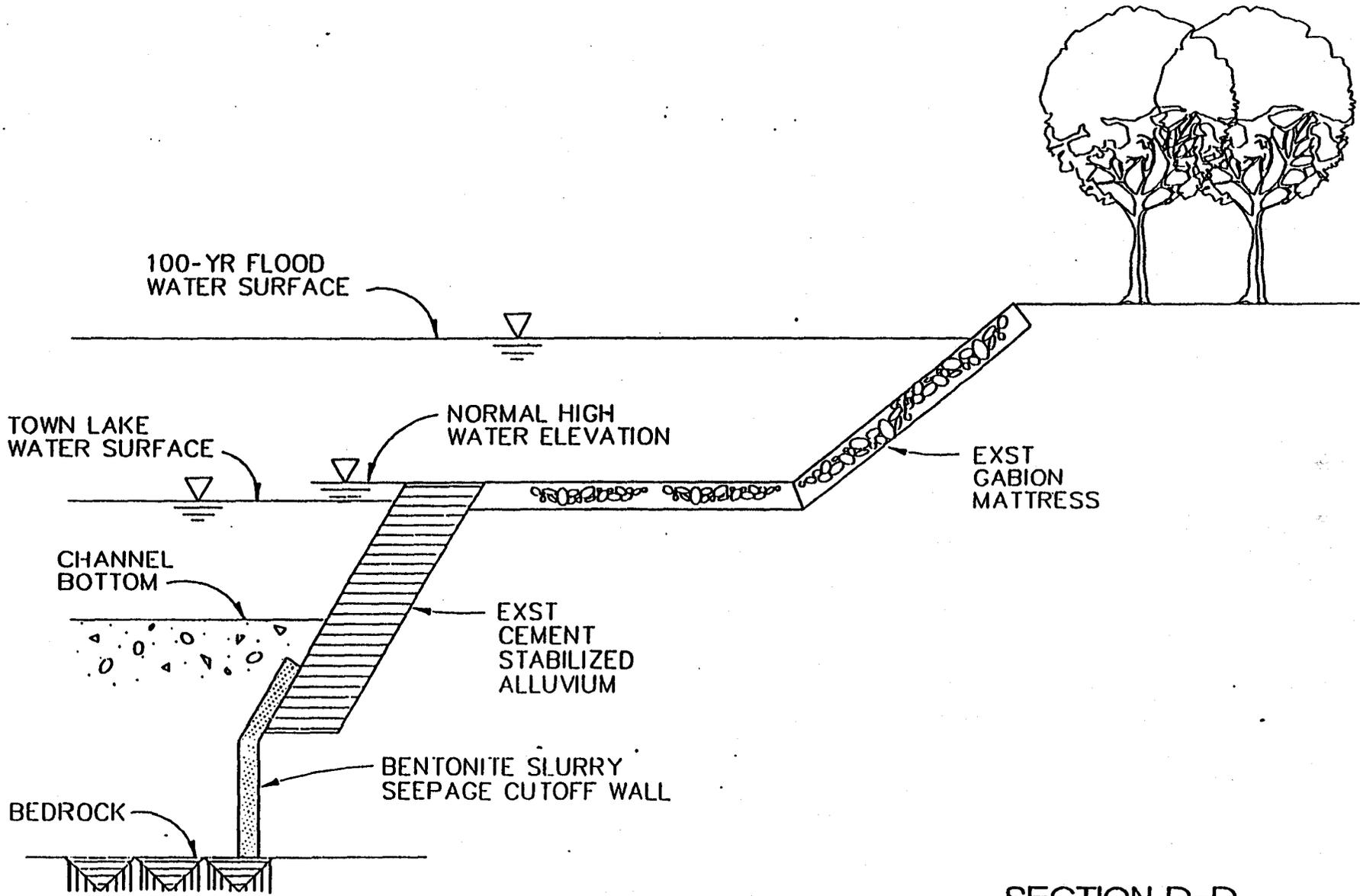
APPL: CITY OF TEMPE
APPL #: 944090400-CL

SHEET 1 OF 10

SECTION B-B

RIO SALADO COE 404
PERMIT APPLICATION





APPL: CITY OF TEMPE
APPL #: 944090400-CL
SHEET 9 OF 10

SECTION D-D
RIO SALADO COE 404
PERMIT APPLICATION





ARIZONA DEPARTMENT OF WATER RESOURCES

RECOVERY WELL PERMIT

PERMIT NO. 74-547332

STATE OF ARIZONA)
) ss.
County of Maricopa)

This is to certify that I have examined Application No. 74-547332 for a recovery well permit. I have determined that the application meets the requirements of Title 45, Chapter 3.1, Article 3, Arizona Revised Statutes. The Department hereby grants the applicant authority to operate the recovery wells subject to the following limitations and conditions:

Permit Limitations

Applicant:

City of Tempe
P.O. Box 5002
Tempe, Arizona 85280

PERMIT 74-547332

Permitted recovery well(s):

Well Registration Number	Location of Well	Design Pump Capacity (GPM)	Well Depth (Feet)	Casing Diameter (Inches)	Maximum Annual Recovery (Acre Feet)
55-551601	SE¼NE¼NE¼ Sec.15 T1N R4E	3200	140	24	51.6
55-551602	SW¼NW¼NW¼ Sec.14 T1N R4E	3200	160	24	51.6
55-551603	SE¼NW¼NW¼ Sec.14 T1N R4E	3200	155	24	51.6
55-551604	NW¼NE¼NW¼ Sec.14 T1N R4E	3200	155	24	51.6
55-551605	NE¼NW¼NE¼ Sec.14 T1N R4E	3200	135	24	51.6
55-551606	NW¼SW¼NE¼ Sec.14 T1N R4E	3200	140	24	51.6
55-551607	NE¼SE¼NW¼ Sec.14 T1N R4E	3200	160	24	51.6
55-551608	SW¼SE¼NW¼ Sec.14 T1N R4E	3200	160	24	51.6
55-551609	SW¼SW¼NW¼ Sec.14 T1N R4E	3200	160	24	51.6
55-551610	SE¼SE¼NE¼ Sec.15 T1N R4E	3200	150	24	51.6

Recovery wells are subject to the operating plans of Facility Permit Numbers 71-516371, 71-551762, and 72-533659, and are subject to the conditions of Water Storage Permit Numbers 73-516371.7000, 73-551761, and 73-533659.

Recovered water will be used for:

The beneficial municipal use of the permittee including but not limited to maintaining the Town Lake water levels and/or delivery for uses within the municipal water system.

Legal description of the land on which recovered water will be used:

Parts of Sections 14, 15 and 16 of Township 1 North Range 4 East GSRB&M.

Permit Conditions

1. In accordance with A.R.S. § 45-875.01.(D), an annual report shall be submitted no later than March 31 following the end of each completed annual reporting permit. The first annual reporting period shall be from the date of this permit through December 31, 1996. Subsequent annual reporting periods shall be January 1 through December 31.
2. The annual report shall include the following information:
 - a. The well registration number and location of the wells used to recover stored water.
 - b. The quantity of water recovered from each well as measured in a manner consistent with the requirements and specifications for water measuring devices adopted pursuant to A.R.S. § 45-604.
 - c. For all stored water recovered each year, report the Water Storage Permit Number(s) from which the water storage originated, the amount of recovery (in acre feet) attributed to each Water Storage Permit, and the source of water originally stored pursuant to each Water Storage Permit.
3. Recovery from each of the Well Registration Numbers referenced above shall not exceed the specified annual volume limit of 51.6 acre feet.

WITNESS my hand and seal of office this 8th day of August, 1996.



Herb Dishlip, Assistant Director

ENVIRONMENTAL SERVICES
DEPARTMENT



ENGINEERING SERVICES
DIVISION

Albert F. Brown, RS, MPA, Director

2406 S. 24 Street, Ste E-204
Phoenix, AZ 85034

John A. Power, P.E., Division Manager
Joseph E. Jason, P.E., Civil Engineer
(602) 506-6666
TTN (602) 506-6704
FAX (602) 506-6925

Maricopa County Environmental Services Department
Engineering Services Division

CERTIFICATE OF APPROVAL TO CONSTRUCT

PROJECT DESCRIPTION to serve: Construction of concrete caps over two existing sanitary sewer pressure manholes. These manholes currently provide access to two sanitary sewer inverted siphons (18" diameter and 21 inch diameter) and are located just below the Salt River channel bed. Purpose of the caps is to decrease the potential for either infiltration into the sewer from the proposed Rio Salado Town Lake and/or leakage of the sewage into the proposed lake. MCESD #96733

Location: City of Tempe Maricopa
City or Town (nearest) County

PROJECT OWNER: City of Tempe, 31 East 5th Street, Tempe, Arizona 85280
Mailing Address

Pursuant to AAC Title 18: Chapter 4, Article 5; or Chapter 9, Article 8; and Maricopa County Environmental Health Code Chapters II or V.

Approval to construct the above-described facilities as represented in the approved plan documents on file with the Maricopa County Environmental Services Department is hereby given subject to the following provisions: None

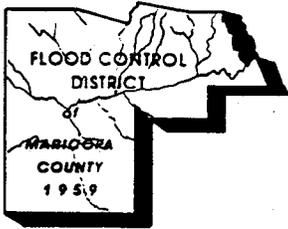
If construction has not started within one year of the date of this issuance, this Certificate will be void and a written extension of time shall be required.

Date Approved: December 17, 1996

ENGINEERING SERVICES DIVISION

by Joseph E. Jason
Joseph E. Jason, P.E., Civil Engineer

cc: Sewer Co. - City of Tempe
Engineer - CH2M Hill
AZ. Corp. Commission
MCESD/Water Program



FLOOD CONTROL DISTRICT
of
Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5859

BOARD OF DIRECTORS
Betsey Bayless
Jan Brewer
Fulton Brock
Don Stapley
Mary Rose Garrido Wilcox

February 26, 1997

Mr. Howard C. Hargis, P.E.
Assistant City Engineer
City of Tempe
Post Office Box 5002
Tempe, Arizona 85280

— RECEIVED —

FEB 27 1997

CH2M HILL/PHOENIX

Subject: Tempe Rio Salado Town Lake - Final P&S Review

Dear Mr. Hargis:

The Flood Control District has reviewed the responses to our final review comments as provided by Steven Walker of CH2MHill in a letter dated January 31, 1997. We find the responses to be acceptable with the following two exceptions.

1. Regarding Schedule "B", Specification comment #3 response; We believe, and the PCA seems to support, that the strength of the mortar bedding should be greater than the strength of the material that the bedding is expected to create a bond between; i.e., the CSA which has a strength of 1,800 psi. Therefore, we believe the mortar bedding should have a minimum strength of 2,500 psi.
2. Regarding Schedule "C", Plans comment #2 response; We can accept CH2MHill's response with one change. We suggest that in the Typical Control Joint Detail 1, the note "FIRM, DENSE CSA" be deleted. This is because the slab is located over both CSA and compacted granular fill material. This would seem to make the detail more generic and "typical".

Please proceed to incorporate these remaining two comments into the final set of P&S, and provide the District with one complete set of the P&S for our use. At the appropriate time in the project schedule, the contractor must apply for a license from the District in accordance with previous discussions and he project specifications.

If you have any questions, please call me at 506-1501.

Sincerely,

Donald J. Rerick, P.E.
Project Manager

Copy to: Steven Walker, CH2MHill

Page 1 of 4

RELMIS: R-913.63

UNDERGROUND PIPELINE
(SEWER - WATER - STORM DRAIN - ETC.)

LEASE
No. 719696
LEASEE
No. 25161

THIS AGREEMENT, made this 21st day of November, 1996, by and between SOUTHERN PACIFIC TRANSPORTATION COMPANY, a corporation. (Licensor), and CITY OF TEMPE, a corporation, address: 31 East Fifth Street, P.O. Box 5002, Tempe, Arizona 85280, (Licensee);

WITNESSETH:

1. Grant of Rights: Licensor hereby grants to Licensee, subject to the reservations, covenants and conditions herein contained, the right to construct, reconstruct, maintain and operate shoreline improvements, pier encasements and slurry walls, subject to the terms of this Agreement, (herein called "structure") in connection with the Rio Salado Lake Project, which will create an artificial lake beneath Licensor's Salt River Bridge, at Mile Post R-913.63 at or near Tempe, County of Maricopa, State of Arizona, in the location shown on the attached Drawing(s) and Exhibits attached hereto and made a part hereof.

2. Licensee, at its sole cost and expense shall furnish the necessary labor and materials, tools and equipment and shall perform the following work:

(a) construct and maintain slurry walls and shoreline improvements in connection with the Rio Salado Lake Project which will create an artificial lake beneath Licensor's Salt River Bridge at M.P. R-913.63, as shown on drawing fro project Nos. 946523C&D, dated April 1996.

(b) encase the steel piers in concrete as shown on Drawing B-S-45 dated April 1996, attached and referred to as Exhibit "A"

(c) the "Lake Safety Management Plan" and the "Final Dam Operation Plan" shall be submitted to Licensor for review and approval.

3. In addition, Licensee shall, upon the request of Licensor, and at Licensee's sole cost and expense, deflate the dams and drain the lake should a catastrophic event occur that would necessitate Licensor access to the river bed below the bridge.

"SPTCO"

4. Licensee agrees that Licensor shall reserve the right to review longer term effects should they occur, such as corrosion, and require Licensee, at the sole cost and expense, to provide remedy for same.

5. Construction and Maintenance: Said structure shall be constructed, reconstructed and maintained in accordance with plans approved by Licensor. Approval by Licensor shall not constitute a warranty by Licensor that such plans conform with federal, state and/or local codes and regulations applicable thereto. All work upon or in connection with said structure shall be done to Licensor's satisfaction at such times and in such manner as not to interfere with Licensor's operations. In the construction, reconstruction and maintenance of said structure, Licensee shall keep Licensor's premises in a neat and safe condition, failing which Licensor may do so at Licensee's expense. If required by Licensor in its use of Licensor's premises, Licensee shall reconstruct, relocate or alter said structure. Except in emergencies, Licensee shall give Licensor five (5) days' written notice of the day and hour it proposes to do any work on said structure.

Licensee shall cooperate with Licensor in making any tests Licensor requires of any installation or condition which in its judgment may have adverse effect on any of the facilities of Licensor. All costs incurred by the tests, or any corrections thereafter, shall be borne by Licensee.

6. The rights herein granted are subject to the rights of Licensor (or anyone acting with the permission of Licensor) to construct, reconstruct, maintain and operate fiber optic and other telecommunications systems (systems) in, upon, along, across and beneath the premises and rights-of-ways of Licensor including the premises through which said structure shall be constructed.

Licensee agrees to reimburse Licensor and/or the owner of the system(s) for all expenses which either may incur which expenses would not have been incurred except by reason of the use of the premises by Licensee, its agents, employees or invitees including relocation costs or any damages incurred by such owner due to injury to the system(s).

Licensee, at least five (5) days prior to performing any digging activities on the premises of Licensor, must call 1-800-AT-FIBER (available 24 hours) to receive a Qwest Communications Corporation control number. Licensee will be advised if a telecommunications system is buried anywhere on or about the premises of Licensor in the location where Licensee will perform such digging activities. If there is a telecommunications system, Licensee will be advised as to the owner of the telecommunications system and provided instructions on arranging for a cable locator and will be advised whether relocation or other protection for the telecommunications system is required prior to beginning any work on the premises of Licensor.

7. To the extent allowed by law, Licensee agrees to release, defend and indemnify Licensor from and against any and all liability, cost and expense for injury to or death of persons and damage to or destruction of property (including, but not limited to, the property and employees of each of the parties hereto), when arising or resulting out of or in any way connected with the performance of work under this Agreement, except when due to the sole negligence, gross negligence, willful misconduct of criminal actions of Licensor. This covenant of indemnity shall continue in full force

and effect notwithstanding the full payment of all sums due under this Agreement, or the satisfaction, discharge or termination of this Agreement in any manner whatsoever.

The term "Licensor" as used in this section shall include the successors, assigns and affiliated companies of Licensor, and any other railroad company operating upon Licensor's tracks.

8. **Condemnation:** In the event all or any portion of Licensor's premises shall be condemned or taken for public use, Licensee shall receive compensation only for the taking and damaging of said structure. Any compensation or damages for taking said premises or Licensee's interest therein awarded to Licensee shall be assigned by Licensee to Licensor.

9. **Termination:** This Agreement may be terminated by either party hereto by giving one hundred and twenty (120) days' written notice to that effect to the other party and Licensee shall thereupon remove said structure and appurtenances and restore the premises of Licensor to Licensor's satisfaction failing which Licensor may arrange to do so at Licensee's expense.

If Licensee makes default in respect to any covenant or condition on Licensee's part hereunder and fails to correct such default within thirty (30) days' after receipt of notice from Licensor so to do, Licensor may forthwith terminate this Agreement by notice to Licensee.

10. **Environmental Protection:** Licensee shall, at its expense, comply with all applicable laws, regulations, rules and orders regardless of when they become or became effective, including, without limitation, those relating to health, safety, noise, environmental protection, waste disposal, and water and air quality, and furnish satisfactory evidence of such compliance upon request of Licensor.

Should any discharge, leakage, spillage, emission or pollution of any type occur upon or arise from the premises covered hereunder as a result of Licensee's use, presence, operations or exercise of the rights granted hereunder, Licensee shall immediately notify Licensor and shall, at Licensee's expense, be obligated to clean all property affected thereby, whether owned or controlled by Licensor or any third persons to the satisfaction of Licensor (insofar as the property owned or controlled by Licensor is concerned) and any governmental body having jurisdiction in the matter. Licensor may, at its option, clean Licensor's premises; if Licensor elects to do so, Licensee shall pay Licensor the cost of such cleanup promptly upon the receipt of a bill therefor. Licensee agrees to release, indemnify and defend Licensor from and against all liability, cost and expense (including, without limitation, any fines, penalties, judgments, litigation costs and attorney fees) incurred by Licensor as a result of Licensee's breach of this section, or as a result of any such discharge, leakage, spillage, emission or pollution, regardless of whether such liability, cost or expense arises during the time this Agreement is in effect or thereafter, unless such liability, cost or expense is proximately caused solely and exclusively by the active negligence of Licensor, its officers, agents or employees.

11. **Contractors:** No work on Licensor's premises shall be commenced by any contractor for Licensee until such contractor has entered into Licensor's standard Contractor's Right of Entry agreement covering such work.

12. Non-assignability: This Agreement is not assignable, in whole or in part, by Licensee without Licensor's prior written consent.

13. Liens: Licensee shall pay in full all persons who perform labor on said premises for Licensee, and will not suffer any mechanics' or materialmen's liens to be enforced against Licensor's premises for work done or materials furnished at Licensee's instance or request. If any such liens are filed thereon, Licensee agrees to remove the same at Licensee's own cost and expense and to pay any judgment which may be entered thereon or thereunder. Should the Licensee fail, neglect or refuse so to do, Licensor shall have the right to pay any amount required to release any such lien or liens, or to defend any action brought thereon, and to pay any judgment entered therein, and the Licensee shall be liable to the Licensor for all costs, damages, and reasonable attorney fees, and any amounts expended in defending any proceedings or in the payment of any said liens or any judgment obtained therefor.

14. Said structure shall be installed in accordance with minimum requirements of Form CS 1741, also attached and made a part hereof.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed in duplicate the day and year first herein written.

LICENSOR

By _____
(Title)

LICENSEE

By _____
(Title)



Tel xxx/xxx-xxxx
Fax xxx/xxx-xxxx
e-mail: xxxxxxxx@apsc.com
<http://www.apsc.com>

Mail Station xxxx
P.O. Box 53933
Phoenix, AZ 85072-3933

August 29, 1996

Mr. Howard Hargis
Assistant City Engineer
City of Tempe
P.O. Box 5002
Tempe, AZ 85280

**RE: SOUTH BANK INTERCEPTOR STORMWATER DIVERSION PIPELINE
ENCROACHMENT AGREEMENT**

Dear Mr. Hargis:

Enclosed is your copy of the fully executed Encroachment Agreement for the above referenced project.

If you have any questions regarding this matter, please call me on 371-7031.

Sincerely,

Barbara H. Cowdery
Land Agent
SI Land Services

Enclosure



**ENCROACHMENT PERMIT
AND INDEMNIFICATION AGREEMENT**

This Encroachment Permit and Indemnification Agreement (the "Agreement") is entered into this 29th day of August, 1996, by and between City of Tempe, an Arizona municipal corporation ("Tempe") and Arizona Public Service Company, an Arizona corporation ("APS").

RECITALS:

- A. APS is the owner a Right of Way Easement recorded in Docket 4380, Pages 152-158, and a Utility Easement recorded in Docket 7695, Page 359 Maricopa County Records referred to herein as the ("Easements").
- B. APS presently has transmission lines along with appurtenant fixtures and equipment within the Easements (the "Lines").
- C. Tempe wishes to encroach upon the Easements by constructing and maintaining the South Bank Interceptor Stormwater Diversion Pipeline within the Easements as shown on Exhibit "A" attached hereto and by this reference incorporated herein (the "Pipeline").
- D. APS is willing to allow said encroachment upon the terms and conditions contained herein.

PROMISES AND COVENANTS:

NOW, THEREFORE, in consideration of the foregoing recitals and in further consideration of the following covenants, promises, and provisions, the parties hereby agree as follows:

- 1. APS hereby authorizes Tempe, at Tempe's sole cost and expense, to install the Pipeline in the locations as shown on Exhibit "A" attached hereto and by this reference incorporated herein.
- 2. No vehicle over 14 foot in height shall be parked within the Easements for the contractor staging area shown on Dwg. Nos. A-G-6 and A-G-7 attached hereto.
- 3. No vehicles shall be refueled within the Easements.

4. No flammable or hazardous materials shall be stored within the Easements.
5. Tempe shall obtain independent permission to cross the Easements from the underlying landowner and any other easement holders.
6. Only clean sand and gravel shall be deposited in the designated waste disposal area shown on Dwg. A-G-7 and the material shall be leveled and compacted to avoid restricting APS' access in the Easements. Extreme care must be used when depositing material in the vicinity of tower foundations to avoid damaging these foundations.
7. The final elevation of the waste disposal area shall be no greater than the top of the foundation concrete for the towers located approximately in the center of this area.
8. APS shall not be liable for damage to Tempe's facilities located within the Easements as a result of APS operation and maintenance of the Lines.
9. At all times during the construction and maintenance of the Pipeline within the Easements, Tempe shall comply with all applicable laws, ordinances, rules, regulations, and safety requirements, including but not limited to the Arizona Revised Statutes, the Occupational Safety and Health Standards for General Industry (29 C.F.R. Part 1910), and the National Electrical Safety Code.
10. Tempe shall indemnify, hold harmless, and waive all claims against APS, its employees, agents, and representatives, for any and all claims, demands, suits, losses, costs, and damages of every kind and description, including any attorneys' fees or litigation expenses, on account of loss of, or damage to, any property or for injury to, or death of, any person caused by, arising out of, or contributed to, in whole or in part, by reason of the location, construction, operation, use, maintenance, repair or removal of the Pipeline, or equipment or vehicles within the Easement; provided, however, that this indemnification, waiver and release shall not extend to active negligence or willful misconduct of APS.
11. Tempe further hereby indemnifies APS against loss of revenue if Tempe, its employees, agents, or representatives during construction, maintenance, use, or removal of the Pipe in any way damage the Lines or APS' towers or equipment located within the Easements; provided, however, that this indemnity shall not extend to active negligence or willful misconduct of APS.

12. Tempe acknowledges that APS has provided it with general electric and magnetic field-related information for its consideration and use prior to execution of this Agreement.

13. This Agreement shall not limit or restrict APS' rights granted under the Easement, including the right to add or remove electric facilities in the Easements. Tempe shall not interfere with APS' use of the Easement or APS' business conducted thereon.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first above written.

CITY OF TEMPE

By

Noured A. Hargis

Its

Assistant City Engineer

ARIZONA PUBLIC SERVICE COMPANY
an Arizona corporation

By

Michael A. Phelt

Its

Acting Group Leader

STORM WATER POLLUTION PREVENTION PLAN AND N.P.D.E.S. PERMIT SPECIAL PROVISIONS

This project is subject to National Pollutant Discharge Elimination System (N.P.D.E.S.) requirements under the E.P.A. General Permit for Arizona. Under provisions of that permit, the contractor shall be designated as permittee, and shall be responsible for providing necessary material and for taking appropriate measures to assure removal of at least 80 percent of the additional sediment generated in storm water runoff from the project (relative to pre-project sediment levels), and for completing the following documents:

- Storm Water Pollution Prevention Plan (S.W.P.P.P.) for the project, including certification of compliance form.
- Notice of Intent (N.O.I.) to be covered by N.P.D.E.S. General Permit for Arizona, including certification of signature.
- Notice of Termination (N.O.T.) of coverage under N.P.D.E.S. General Permit (upon project completion).

All subcontractors shall comply with all N.P.D.E.S. requirements under the supervision of the General Contractor, and shall submit a completed, signed subcontractor certification form, thereby designating themselves as co-permittees. A draft framework for the S.W.P.P.P. is enclosed in this Project Specification Book. Contingency bid items likely to be necessary to carry out the S.W.P.P.P. are included in the bid proposal. The contractor will be expected to review this framework S.W.P.P.P. and update/revise it as necessary throughout the construction of the project, in order to assure compliance with the E.P.A. permit requirements. Revisions to the S.W.P.P.P. requiring use of these contingency bid items, or any other additional costs, shall be subject to approval by the City prior to implementation. The finalized S.W.P.P.P. shall be kept on the project site at all times, and shall be retained by permittee for three years following project completion.

The unit prices bid for the proposal items shall include all material, labor, and other incidental costs relating to the provision, installation, and maintenance of that bid item during project construction. Such incidental costs shall include contractor costs in order to assure proper operation of the pollution-control devices installed, including all maintenance, cleaning, and disposal costs associated with clean-up and repair following storm events or other runoff or releases on the project. No additional payment will be made for these incidental costs.

The contractor shall submit completed signed N.O.I. Forms prior to the project preconstruction conference to the following addresses: U.S. E.P.A. Storm Water Notice of Intent, P.O. Box 1215, Newington, VA 22122 and ADEQ-Storm Water Coordinator, P.O. Box 600, Phoenix, AZ 85001. Copies shall be transmitted to the City's construction project manager, as provided on the N.O.I. form, at the time of the preconstruction meeting. The Contractor shall prepare a final SWPPP and submit it at the preconstruction meeting for discussion and approval.

Failure by the contractor (or any of its appropriate subcontractors) to submit the N.O.I. forms within this time frame (or to promptly make revisions to those forms as requested by the City) which prevents submittal of the forms to E.P.A. within the mandated deadline of 48 hours prior to start of construction will result in delay of the start of construction. The contractor will not be entitled to any claim for additional compensation for additional costs resulting from such a delay in the construction start date. The N.O.I. shall be posted on the construction site along with the S.W.P.P.P.

It is the permittee's responsibility to perform inspections of all storm water pollution control devices on the project on a monthly basis, and following each rainfall of 0.50 inches or more. The contractor is responsible for maintaining those devices in proper working order, including cleaning and/or repair. No separate payment will be made for such inspections, cleaning, or repair.

All S.W.P.P.P. reports required under this contract shall be available to the public in accordance with the requirements of Section 308 (b) of the Clean Water Act. The contractor as a permittee of construction activities with storm water discharges covered by the Arizona General Permit shall make plans available to the public upon request through the E.P.A.

No condition of the Arizona General Permit as well as the S.W.P.P.P. shall release the contractor from any responsibilities or requirements under other environmental statutes or regulations.

Upon total project completion, acceptance, and de-mobilization, the contractor shall submit its completed, signed N.O.T. form to the E.P.A. Storm Water Notice of Termination, P. O. Box 1185, Newington, VA 22122, with copies to the same agencies who received copies of the N.O.I., thereby terminating all N.P.D.E.S. permit coverage for the project.

Necessary forms for the N.O.I., and the draft S.W.P.P.P. are contained in this booklet. Additional forms will be available through the City's Construction Project Manager and Inspector.



WQMS-301.210-944090400-CL

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Fife Symington, Governor Edward Z. Fox, Director

March 13, 1995

Mr. Howard Hargis
City of Tempe
City Engineers Office
P.O. Box 5002
Tempe, AZ 85280



RE: To Construct Rio Salado's Town Lake and Associated Facilities in the Salt River Between Priest Drive and McClintock Drive in the City of Tempe, Maricopa County, Arizona - PUBLIC NOTICE NO. 944090400-CL.

Dear Mr. Hargis:

The Arizona Department of Environmental Quality (ADEQ) staff has reviewed the referenced Public Notice and other information for State Water Quality Certification pursuant to Sections 401 and 404 of the Federal Clean Water Act. Information appearing in Section A describes the project. Information listed in Section B were used as the basis for this State Certification. Our technical review has determined that no negative impacts will occur to the chemical, physical or biological integrity of the Salt River when the Conditions shown below in Section C are adhered to during construction and post construction activities.

A. PROJECT DESCRIPTION

1. The Tempe Town Lake will be formed by the construction of two inflatable dams in the Salt River. A six foot high dam will be placed upstream of the Indian Bend Wash confluence with the Salt River and a 16 foot high dam will be placed ½ mile upstream of Priest Drive. The lake will be two miles long and cover 200 surface acres.
2. Ancillary facilities consist of: boat slips, a City Park, operations building, bike paths, hiking trails, lighting, docks, streets, plantings of trees and shrubs, pump house, public art, water features, parking and picnic areas and other facilities designed to appeal to the public.

B. BASIS FOR CONDITIONAL STATE 401 WATER QUALITY CERTIFICATION

1. State of Arizona, Water Quality Standards for Navigable Waters, Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1.
2. Arizona Department of Environmental Quality Policy for Protecting Water Quality During Facility Construction, adopted December 21, 1994.
3. Final Report and Recommendations of the Governor's Riparian Habitat Task Force, Executive Order 89-16, dated October 1990, and Executive Order No. 91-6 dated February 14, 1991.
4. A letter dated May 2, 1994 to Ed Swanson from Steve Neilson of the City of Tempe inviting Ed to a Pre-application meeting at the COE office on May 19, 1994.

Mr. Howard Hargis

March 13, 1995

Page 2

5. On May 19, 1994 a meeting was held to introduce the Tempe Town Lake project at the COE office in Phoenix. The meeting was attended by representatives of the COE, ADEQ, USFWS, AGF, the City of Tempe and the consultant, CH2M Hill.
6. U.S. Army Corps of Engineers (COE) Public Notice No. 944090400-CL dated September 1, 1994 and received by ADEQ on December 8, 1994.
7. Completed ADEQ form 404-033 dated November 14, 1994 and received by ADEQ on November 16, 1994 from Steve Walker of CH2M Hill (CH2M) including the following items:
 - a. Five pages of technical data relating to water quality issues.
 - b. A two page report dated September 22, 1994 from George Cotton concerning Salt River Sedimentation.
 - c. Twenty 11 X 14 inch drawings of the project.
 - d. Eighteen pages of drawings and explanations of the project.
 - e. A one page letter dated June 20, 1994 to Steve Neilson from Wayne Palsma concerning the applicability of an NPDES Permit for the Town Lake.
 - f. A one page letter dated August 4, 1994 to Steve Neilson from James Du Bois concerning the applicability of an Aquifer Protection Permit.
8. A six page alternatives analysis dated August 30, 1994 to Cindy Lester (COE) from Rich Randall (CH2M).
9. A letter dated December 14, 1994 to Rich Hill (CH2M) from Jim Matt requesting clarification on 14 items concerning the Town Lake.
10. A letter dated January 9, 1995 to James Matt from Steve Walker (CH2M) responding to the December 14, 1994 letter in Item B.9.
11. A letter dated January 12, 1995 from James Matt to Rich Randall requesting clarification on nine items concerning the town lake.
12. A letter dated February 14, 1995 to James Matt from Steve Walker responding to the questions in Item B.11.
13. A meeting at ADEQ on February 27, 1995 attended by Howard Hargis of the City of Tempe, Steve Walker of CH2M Hill and Jim Matt of ADEQ. This meeting was primarily concerned with a discussion of the sampling plan.
14. Letter dated March 13, 1995 from Tom Trent, Clean Lakes Coordinator to Jim Matt discussing the sampling parameters for the Tempe Town Lake.

C. CONDITIONS FOR STATE 401 WATER QUALITY CERTIFICATION

This State Water Quality Certification is issued by the Arizona Department of Environmental Quality under the authority of Section 401(a) of the federal Clean Water Act (33 U.S.C. §1251 *et seq.*). The conditions listed below apply to this Section 404 Permit issued by the U.S. Army Corps of Engineers. These conditions are enforceable by the U.S. Environmental Protection Agency. Civil penalties up to a maximum of \$25,000 per day of violation may be levied if these certification conditions are violated. Criminal penalties may also be levied if a person knowingly violates any provision of the federal Clean Water Act.

1. Other permits or approvals may be required by Maricopa County, the Arizona Department of Environmental Quality (ADEQ), or the U.S. Environmental Protection Agency if the overall project includes a potable water supply, Stormwater management, wastewater reuse facilities, or wastewater collection/holding/treatment/ disposal facilities.
2. No disposal of construction or demolition wastes, wastewater, contaminated water or any other potential pollutant is authorized by this State 401 Water Quality Certification by ADEQ, except as expressly provided in the Section 404 Permit.
3. This Certification is only for the project described in Section A and is valid for a period of 30 months from the date signed by the Director of the Water Quality Division. If project construction has not started by this deadline, the applicant must notify ADEQ, Attention Surface Water Quality Certification, Water Quality Division, 3033 North Central Avenue, 5th Floor, Phoenix, Arizona 85012. ADEQ will then have the option of extending, modifying or denying this Certification.
4. The applicant must provide a copy of these State 401 Water Quality Certification Conditions to all appropriate contractors and subcontractors. The applicant must also post a copy of these conditions in a weather resistant location at the construction site where it may be seen by the workers.
5. There can be no substantive changes/modifications in the project plans and analyses identified in Sections A and B or the implementation of those plans which might affect surface water quality. If a substantive change/modification is desired, notice and supporting information must be submitted to ADEQ for review. ADEQ will then modify this Certification to include the changes/modifications, provided that Water Quality Standards for Navigable Waters (A.A.C. Title 18, Chapter 11, Article 1) will be achieved. Failure of the operator to promptly notify ADEQ of any proposed substantive changes/modifications could result in a revocation of this Certification. Correspondence to ADEQ must be addressed per Condition C.3, above.
6. When this project is physically commenced at the construction site, ADEQ must be notified by the applicant or his designee within seven days of the start date. When this notification is made, please provide the start date and the names and phone numbers of the prime contractor and a contact person. ADEQ may conduct inspections to determine compliance with A.A.C. Title 18, Chapter 11, Article 1. When the project is complete ADEQ must be similarly notified. Notification must be addressed to ADEQ per Condition C.3, above.
7. Runoff and seepage from roadways, embankments, and other alterations of the natural environment must not cause a violation of A.A.C. Title 18, Chapter 11, Article 1.
8. All off-site material sources for the project must have valid and current permits under the Federal Clean Water Act [Sections 402 (NPDES) and 404] and the State Aquifer Protection Program, where necessary. Facilities and activities not covered by individual permits under these programs are not exempt from the duty to comply with water quality standards, and will be subject to compliance action if violation is documented. Other permits pertaining to air quality may be required for material sources and are the responsibility of the applicant or his agent(s).
9. Water for dust suppression, if used, must not contain contaminants that could violate ADEQ water quality standards for surface waters or aquifers.

Mr. Howard Hargis

March 13, 1995

Page 4

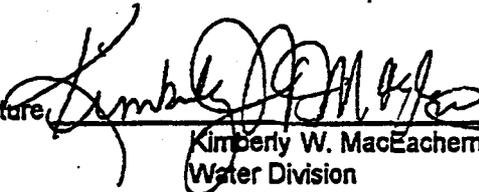
10. Practices to avoid or minimize damage to floodplain ecosystems, including riparian zones and wetlands, should be considered during project planning, construction and operation, consistent with the Final Report and Recommendations of the Governor's Riparian Habitat Task Force of October, 1990 and Executive Order 89-16.
11. Pollution from the operation of equipment in the construction area must be removed from and properly disposed outside of the 100-year floodplain. Spills must be cleaned up and properly disposed.
12. Construction material placed within the 100-year floodplain must be free of substances which can cause or contribute to the pollution of waters of the State. Use of native soil or rock is encouraged whenever possible. The applicant must take necessary steps to insure contaminated materials are not used for fill within the 100-year floodplain. Prior to use as fill, materials obtained from agricultural, mining, or other potentially contaminated areas must be tested to evaluate the presence of pollutants and the results must be reported to ADEQ at the address specified in Condition C.3, above.
13. Erosion control and/or other bank protection features should be used to minimize channel erosion and soil loss, where appropriate. Denuded areas should be revegetated as soon as possible with native plants and seed.
14. Swimming (Full Body Contact) will not be permitted in this lake and signs enforcing this no swimming ban will be posted and be visible from any shore location.
15. Boats with internal combustion engines will not be permitted on this lake except law enforcement officers and properly trained City of Tempe Employees may use boat motors approved by the City of Tempe for emergency or special maintenance activities on the lake.
16. Floating debris will be removed from the lake surface whenever it collects along a shoreline and is evident or when it becomes a hazard to boating. Floating debris will be evaluated daily.
17. Boats will be prevented from docking^{at} or impacting the dams. Signs will be posted to alert boaters to this condition. X
18. A lake sampling plan will be implemented to determine the presence of toxic or hazardous materials and to determine if State water quality standards are being maintained. The following sample plan has been developed specifically for the Tempe Town Lake.
 - a. Post-project sampling of inflows will be conducted to obtain a baseline of water quality of sources to be used to fill the lake. Sediments present on the future lake bottom will be included in the post-sampling program.
 - b. Sampling for pH, temperature, specific conductivity, turbidity and dissolved oxygen will be taken and analyzed weekly from three random locations, 50 feet from the shore and at mid-depth. Transparency measurement with a secchi disk shall be made in conjunction with these parameters.
 - c. Sampling for Fecal Coliform will be taken once a week during the months of May through September at various locations around the lake.
 - d. Sampling for nutrients will be conducted monthly at mid-depth near the downstream dam. Nutrients include: Nitrogen (total) and Phosphorus.

- e. Sampling for Total Petroleum Hydrocarbons (TPH) will be conducted monthly at the same locations as the nutrient and metals samples.
- f. Sampling for metals will commence at monthly intervals after the lake has been filled. Metals and nutrients may be sampled at the same time and location. A pattern should soon be apparent and the sampling frequency reduced. The enclosed page titled "Inorganic Chemistry Test Sets" show the list of metals to be sampled for originally under the column "SURFACE WATER-ALL INORGANICS".
- g. An important parameter for judging the health of a lake is the presence of chlorophyll. During the summer months when fecal coliform is being sampled, chlorophyll a, b, c and pheophytin a shall be sampled for at the same time and locations.

This is the initial sampling program for the Tempe Town Lake. Sample results will be sent to ADEQ at the address shown in Item C.3 above. The sampling program will be modified as sample results are received and reviewed. Mr. Howard Hargis, the applicant, will be notified when it is necessary to implement a change in the sample plan.

Construction procedures must be consistent with the Arizona Department of Environmental Quality Policy for Protecting Water Quality During Facility Construction. The specific procedures for preventing water pollution indicated in ADEQ policy statements #1 through #13, together with Conditions C.1 through C.18, listed above, should ensure compliance with water quality standards. Subject to the above Project Description, Basis and Conditions of Certification, this letter certifies that the proposed project of the City of Tempe in the Salt River Channel complies with existing navigable water quality standards. If you have any questions about this Letter of Certification, please call James Matt (602) 207-4502. Thank you for your cooperation and efforts to protect our natural environment.

Sincerely,

Authorized ADEQ Signature  Date _____
 Kimberly W. MacEachern, Director
 Water Division

Encloser.

KWM:JRM:jrm

cc: James Romero, EPA Region 9
 Corps of Engineers Regulatory Branch - Phoenix
 Larry Rielly, AGFD
 Sam Spiller, USFWS

INORGANIC CHEMISTRY TEST SETS

	SDW ALL INORGANIC	PRIMARY STANDARDS	SECONDARY STANDARDS	SURFACE WATER-ALL INORGANICS	SURFACE WATER NUTRIENTS	P.P. METALS	DISS. METALS	TOTAL RECOV. METALS	MAJOR CATIONS/ ANIONS
TO USE, CHECK:	ABOVE BLOCKS ONLY					INDIVIDUAL TESTS REQUIRED			
ALKALINITY, TOTAL	X		X	X					X
ALKALINITY, PHENOL	X		X	X					X
AMMONIA					X				
CHLORIDE	X		X	X					X
CONDUCTIVITY	X		X	X					
FLUORIDE	X	X		X					X
HARNESS	X		X	X					X
NO2 NO3 TOTAL	X	X		X	X				X
NITRITE					X				
PHOSPHOROUS					X				
TKN					X				
pH	X		X	X					X
SULFATE	X		X	X					X
TDS	X		X	X					X
TSS				X					
TURBIDITY		X		X					
Ag (Silver)	X	X		X		X	X	X	
As (Arsenic)	X	X		X		X	X	X	
B (Boron)				X					
Ba (Barium)	X	X		X			X	X	
Be (Beryllium)						X			
Cd (Cadmium)	X	X		X		X	X	X	
Ca (Calcium)	X		X	X					X
Cr (Chromium)	X	X		X		X	X	X	
Cu (Copper)	X		X	X		X	X	X	
Fe (Iron)	X		X	X				X	X
K (Potassium)				X					X
Hg (Mercury)	X	X		X		X	X	X	
Mg (Magnesium)	X		X	X					X
Mn (Manganese)	X		X	X				X	
Na (Sodium)	X		X	X					X
Ni (Nickel)						X			
Pb (Lead)	X	X		X		X	X	X	
Se (Selenium)	X	X		X		X	X		
Sb (Antimony)						X			
Tl (Thallium)						X			
Zn (Zinc)	X		X	X		X	X	X	

ARIZONA DEPARTMENT OF WATER RESOURCES

Flood Warning and Dam Safety Section
500 North Third Street, Phoenix, Arizona 85004
Telephone (602) 417-2445
Fax (602) 417-2423



FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

February 10, 1997

Howard C. Hargis, P.E.
City of Tempe
P.O. Box 5002
31 East Fifth Street
Tempe, Arizona 85280

Subject: Rio Salado Town Lake Dam (07.66)
Application for New Construction

Dear Mr. Hargis:

We have completed our review of your application and the supporting documentation submitted for the construction of Rio Salado Town Lake Dam. The construction includes a new dam 16 feet high with a 5 foot high appurtenant structure. Your application to construct the dam has been approved. Enclosed are one copy each of the approved application and approved drawings.

Also enclosed for your information are "Requirements During Dam Construction" and "Requirements Following Completion of Dam Construction" which list items required of all applicants. Please read the documents carefully because the items described in them must be fulfilled before the Department can issue the owner a License of Approval to operate the dam.

The Department's current approval is subject to specific terms and conditions as detailed on the approved application. Condition two states that "no foundations or abutments shall be covered by the materials of the dam until the Department has been given an opportunity to inspect and approve the same." We do intend to inspect the work periodically. In that regard please advise us at least 24 hours in advance of all critical construction activities such as inspection of foundations, cutoff walls, grouting, and RCC placement. Advance notification will facilitate timely Departmental inspection and approval.

Please note that, during construction, any changes proposed to the approved design must have Department approval prior to implementation.

Please also note that this approval is limited to the Department's responsibilities and authority as described in the Arizona Revised Statutes, Title 45-Waters, Chapter 6, Article I,

Rio Salado Town Lake Dam (07.66)
February 10, 1997
Page 2

Supervision of Dams, Reservoirs and Projects. This approval in no way relieves the owner of responsibility for securing other required permits, approvals or permissions from other jurisdictional agencies before commencement of construction.

Should you or anyone connected with the construction of this project have any questions regarding this approval, please contact Michael Greenslade of the Safety of Dams and Flood Engineering Unit at (602) 471-2400, extension 7188. Thank you for your cooperation. It has been a pleasure working with you and your consultant, CH2M Hill. We look forward to working with you during the construction phase.

Sincerely,



William C. Jenkins, P.E.

Chief

Safety of Dams & Flood Engineering

WCJ:MDG:mdg

Enclosures

cc (w/o enclosures):

Steve Nielsen, City of Tempe

Steve Walker, CH2M Hill

Charles Pedri, CH2M Hill

Leon Ware, Maricopa County Department of Emergency Planning

Gail Acheson, USDI, Phoenix Resource Area

Gerry Wildeman, ADWR

ARIZONA DEPARTMENT OF WATER RESOURCE
Safety of Dams & Flood Engineering Unit



Application No. 07.66 Filed April 19, 1996
(Applicant shall not fill in above blanks)

APPLICATION for APPROVAL of the PLANS and
SPECIFICATIONS for the CONSTRUCTION, ENLARGEMENT,
REPAIR, ALTERATION or REMOVAL of a DAM and RESERVOIR

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

This application is for the Construction of the Rio Salado Town Lake Dam.
(Construction, Enlargement, Repair, etc.) (Name of Dam)

LOCATION OF DAM

This dam is in Maricopa County, in the NE 1/4, Sec. 16, Twp. 1N., Rge. 4E, G&SR B&M,
at North Latitude 33 °, 26 ', 04 " and West Longitude 111 °, 56 ', 48 ", on USGS Quad Tempe, AZ,
and is located on Salt River, tributary to Gila River.
(Wash, Creek, River or Watershed) (Wash, Creek or River)

OWNER

Name: City of Tempe

Telephone: (602) 350-8200

Mailing Address: P.O. Box 5002
Tempe, AZ 85280

If this application is for construction of a new dam complete all items (1 through 21) except item 12. For enlargement, repair, alteration or removal complete items 12 through 21 and those other items where a change is being made.

DESCRIPTION OF DAM AND RESERVOIR

1. Type of dam Inflatable Rubber Dam System. Purpose of dam Recreation.
(Earth, Rock, Concrete Gravity, etc.)
2. Dam crest elevation 1148.0 feet. Spillway crest elev. 1148.0 Max. feet. Outlet invert elev. 1129.0 Min. feet.
3. Dam height is 19.0 Max feet (Measured from the lowest elevation of the outside limit of the dam at its intersection with the natural ground surface to the crest of the spillway - ARS 45-1201.2).
4. Dam crest length 1874.0 Total feet. Dam crest width N/A feet. Dam Crest Camber (if any) N/A feet.
902 Downstream dam; 968 Upstream dam
5. Dam slope: Upstream N/A : 1 (horizontal:vertical); Downstream N/A : 1 (horizontal:vertical).
6. Spillway (type, dimensions, control(s), design capacity, flow depth, etc.): The dam system has concrete aprons (25' in length across the entire width of the river) and a modified USER TYPE II stilling basin (35' in length across the entire width of the river)
7. Outlet (type, internal diameter, dimensions, control(s), capacity, trashrack, energy dissipator);
The rubber dams can completely deflate to un-impede the river.
48-inch diameter welded steel pipe exposed in concrete of left abutment; trashrack; Downstream sluice gate in pipe
8. Reservoir at spillway crest elevation: Storage capacity 2420 Max. acre-feet; Surface area 214 acres.
Reservoir at dam crest elevation: Storage capacity 2420 acre-feet; Surface area 214 acres.

HYDROLOGIC DATA

9. Drainage area 13,000+/- square miles. Names of upstream dams See Attached List
10. Downstream Hazard: Low - No development or inhabitants in flood plain
(Nearest downstream town, population, distance, other inhabitants or development, Downstream Hazard Potential Classification)

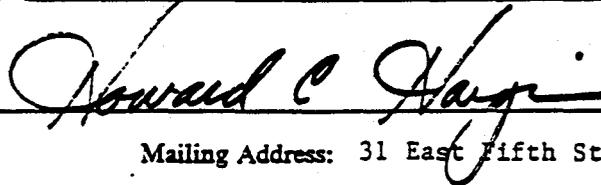
11. Inflow design flood: 1.2 (100-year) Duration N/A hours. Precipitation N/A inches.
(100-year, 0.5 PMF)

Peak inflow rate 250,000 cfs. Water surface elevation is 1152.2 feet at the time of the maximum spillway discharge of 250,000 cfs during routing of the Inflow Design Flood.

GENERAL INFORMATION

12. Description of Work (enlargement, repair, alteration, etc.): New Construction
13. Use of stored water: Recreation
14. Other federal, state or local permits (to be) applied for; Give details, include date(s): USCORE 404 Permit Approved
15. Describe provisions to divert flood flows during construction; include frequency (years) and flow rate (cfs):
None planned. No embankment is required. Construction will not impede river flow events.
16. Construction is expected to begin November 1996 Estimated completion June 1998
(Month and Year) (Month and Year)
17. Estimated cost of dam, reservoir and appurtenances (ARS 45-1204.A): \$22,558,000
18. Fees accompanying this application (fees based on cost; R12-15-151): \$120,790
19. Investigations, design, drawings and specifications prepared by (identify firm and Engineer of Record; attach resume highlighting dam design experience): CH2M HILL EOR: Robert Morrison Sr.
20. Construction Quality Assurance & Quality Control to be performed by (identify firm, Site Engineer, and Engineer of Record; attach resume(s) highlighting dam construction experience): Parsons Brinkerhoff Construction Services
Don Park P.E., Resident Engineer
21. Emergency Action Plan prepared by: City of Tempe

Application submitted by (signature):



Date: 4/17/96

Name: Howard C. Hargis, P.E.

Mailing Address: 31 East Fifth Street, Tempe, Arizona 85281

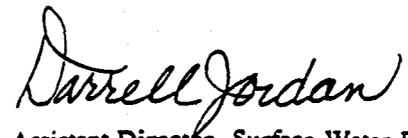
Legal capacity if other than owner: Asst. City Engineer

APPROVAL OF APPLICATION No. 07.65

This is to certify that Application No. 07.65, including the drawings and specifications for Rio Salado Town Lake Dam and Reservoir has been examined and the same is hereby approved, subject to the following terms and limitations:

1. Construction work shall be started within one (1) year from date.
2. No foundations or abutments shall be covered by the material of the dam until the Department has been given an opportunity to inspect and approve the same.
3. An Emergency Action Plan (EAP) and Operations and Maintenance Plan shall be reviewed and approved by ADWR prior to impounding or storing of water.

Dated this 10th day of February, 19 97.



Assistant Director, Surface Water Division

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
SAFETY OF DAMS & FLOOD ENGINEERING UNIT

REQUIREMENTS DURING DAM CONSTRUCTION

MARCH, 1995

Arizona Revised Statutes require that the Department supervise, for safety, the construction of jurisdictional dams. Construction may not commence until the Director has approved the owner's application. Approval is provided in writing.

Once an application is approved, it is valid for a one year period in which construction must begin. If construction does not begin within one year, the Department must review the application again in light of changes which may have occurred since the approval was originally given. Upon written request and good cause shown by the owner, the time for commencing construction may be extended.

PRECONSTRUCTION CONFERENCE

Although not mandatory, it is customary for the owner to hold a preconstruction conference prior to commencement of construction activities. From the Department's perspective, the conference provides a final forum for communication of regulatory requirements so that the contractor can plan construction activities accordingly. All involved regulatory agencies, the prime contractor and all sub-contractors should be invited.

CONSTRUCTION CONTROL

The owner and the owner's engineer shall ensure that construction of a new dam, or enlargement, repair, alteration or removal of an existing dam is carried out in accordance with the plans and specifications approved by the Director. Construction supervision shall be under the direction of a registered professional engineer having proficiency in the design and construction of dams.

The Safety of Dams and Flood Engineering Unit will periodically inspect construction to confirm that it is proceeding according to the approved design and to confirm that proper construction control is being exercised by the owner's engineer. Any unsatisfactory condition shall be remedied by the owner (or the owner's engineer) with the contractor.

The Department shall have access to the dam site for purposes of inspecting all phases of construction including (but not necessarily limited to) the foundation, embankment or concrete placement, inspection and test records, and mechanical installations. At a frequency approved by the Department, the owner's engineer shall submit summary reports of construction activities and test results.

The owner or his engineer shall immediately report to the Department any condition encountered during construction which requires a deviation from the approved plans and specifications. The owner or the owner's engineer shall promptly submit a written request for approval of any necessary change and sufficient data to justify the proposed change. Construction pursuant to the proposed change may not commence without the written approval of the Director.

COMPLETION OF CONSTRUCTION

Upon completion of construction, the Department shall be notified to that effect in writing. A final inspection will be made as soon as practicable. Any deficiencies noted during the final inspection shall be corrected as soon as possible.

Use of the reservoir shall require written permission from the Department.

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
SAFETY OF DAMS & FLOOD ENGINEERING UNIT

REQUIREMENTS FOLLOWING COMPLETION OF DAM CONSTRUCTION

MARCH, 1995

AFTER COMPLETION

As soon as possible after completion of the work and final inspection by an engineer from the Safety of Dams & Flood Engineering Unit, the following shall be filed by the owner or his engineer:

- An Affidavit of the actual cost of construction. Attach a detailed breakdown of the costs, including all engineering costs (see paragraph on fee requirements). A sample Affidavit is attached.
- An additional fee or refund request, as appropriate (see paragraph on fee requirements).
- One set of full sized as-constructed plans, in the form of paper prints. If changes were made during construction, supplemental drawings showing the dam and appurtenances as actually constructed must be filed.
- Construction records such as grouting, materials testing, and locations and baseline readings for permanent bench marks.
- A brief completion report summarizing the salient features of the project, including a description of and causes for any changes or deviations from the approved drawings and specifications which were made during the construction phase.

For certain projects the Director may also require an operating manual for the dam and its appurtenant structures, including schedules for surveillance activities and baseline readings for any installed instrumentation.

Upon completion of these items and finding that the dam has been constructed in accordance with the approved plans and specifications, a license of final approval will be issued. Pending issuance of a license, use of the reservoir shall require written permission from the Department.

FEE REQUIREMENTS

Payment of the application fee is required for all new construction, alteration, repair, enlargement or removal applications for dams. The fee is based upon the total project cost. The project cost shall include all costs associated with construction of the dam and appurtenant works. Preliminary investigations and surveys, engineering design, supervision of construction and any other engineering costs shall also be included.

Based upon these total costs the fee will be computed according to the following schedule:

- For the first \$100,000 of the estimated cost, two (2 %) percent.
- For the next \$400,000, one and one-half (1.5 %) percent.
- For the next \$500,000, one (1 %) percent.
- For all costs in excess of \$1,000,000, one-half of one (0.5 %) percent.

Upon completion of the project, the actual total cost shall be tabulated and the fee recomputed for this amount in accordance with the schedule. If the recomputed fee exceeds the fee paid with the application by \$50.00 or more, then the owner shall pay the difference between the fee already paid and the recomputed fee. If the recomputed fee is less than the original fee by an amount of \$50.00 or more, then the owner shall be entitled to a refund by the amount of the difference between the fee already paid and the recomputed fee.

Example fee calculation (fee must accompany the application):

<i>ESTIMATED COST</i>	\$6,420,000.00
2% x \$100,000.....	2,000.00
1.5% x \$400,000.....	6,000.00
1% x \$500,000.....	5,000.00
0.5% x \$5,420,000.....	<u>27,100.00</u>
<i>TOTAL FEE</i>	\$40,100.00

If the actual cost for this project were \$6,482,500.00, the recomputed fee would be:

<i>ACTUAL COST</i>	\$6,482,500.00
2% x \$100,000.....	2,000.00
1.5% x \$400,000.....	6,000.00
1% x \$500,000.....	5,000.00
0.5% x \$5,482,500.....	<u>27,412.50</u>
<i>RECOMPUTED FEE</i>	\$40,412.50
Original Fee.....	<u>- 40,100.00</u>
<i>DIFFERENCE</i>	\$312.50

In this case the owner would be required to pay an additional fee of \$312.50. If the actual cost were \$6,320,000.00, then the recomputed fee would be \$39,600.00. The difference would be \$500.00 in the owner's favor, and the owner would be entitled to a refund of \$500.00.

A refund may be obtained by requesting it in writing with supporting documentation. The Department will review the final cost statement and initiate the refund process if a refund is indicated.

SAMPLE AFFIDAVIT OF TOTAL COST - PLEASE USE YOUR OWN LETTERHEAD

Arizona Department of Water Resources
 Safety of Dams and Flood Engineering Unit
 500 North Third Street
 Phoenix, Arizona 85004-3903

Gentlemen:

I, _____ am the _____
(Name) (Owner or Authorized Agent of Owner)
 of the _____
(Name of Dam and Reservoir)

The final actual total cost of the construction (or enlargement, repair, alteration, or removal, as appropriate) of the dam and appurtenant works to completion thereof is as follows:

*** 1. ENGINEERING**

- 1.1 Preliminary Investigations and Surveys..... \$ _____
- 1.2 Preconstruction surveys (geologic, hydrologic, hydraulic, structural, testing and design)..... \$ _____
- 1.3 Contract administration and construction supervision..... \$ _____
- 1.4 Construction quality control testing..... \$ _____

TOTAL ENGINEERING \$ _____

*** 2. CONSTRUCTION CONTRACT PAYMENTS**

- ** 2.1 Final payment for contract bid quantity list..... \$ _____
- ** 2.2 Final payment for change orders to bid quantity list..... \$ _____

TOTAL CONSTRUCTION CONTRACTS..... \$ _____

TOTAL CONSTRUCTION COST (Engineering + Construction Contracts)..... \$ _____

I hereby declare under penalty of perjury that, to the best of my knowledge and belief, the above statement is true and correct.

Executed on _____ at _____, Arizona.

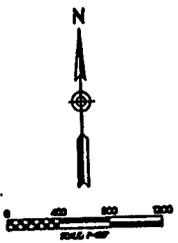
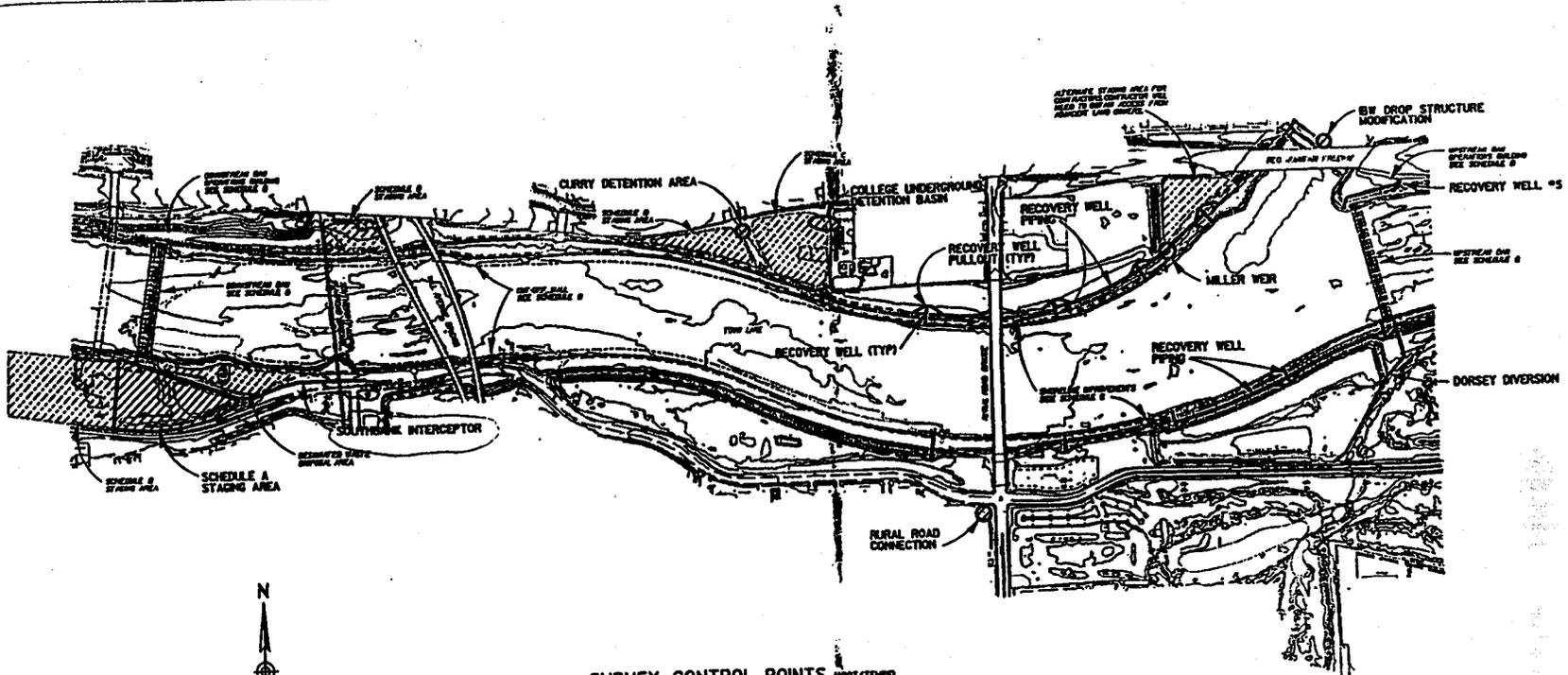
(Owner's Signature)

(Notary)

(Date)

* The cost breakdown must include all applicable costs as indicated. For projects with two or more features, an allocation of total project cost items to each appropriate feature may be made. Allocations of project cost items may be combined when properly identified to fit the individual circumstances.

** Attach forms showing contract bid quantities with prices and final pay quantities, including change order items.



SURVEY CONTROL POINTS (DOT/TEMP)

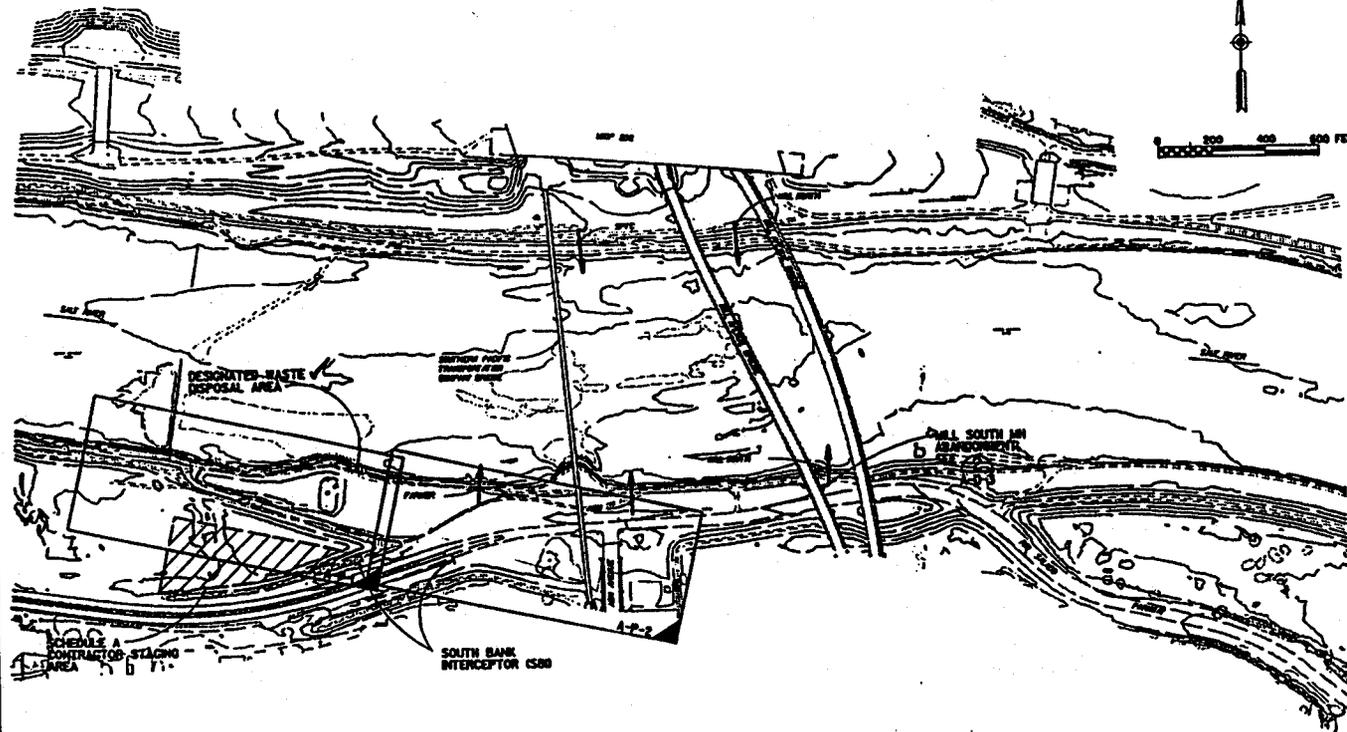
ID	N	E	ELEV	DESCRIPTION
174	283637.0774	297259.7987	867.70	S.C. IN MANHOLE AT CENTERLINE SCOTTSDALE RD 200' N INTERSECTION OF ST BY SIGN OF MANHOLE PANEL PT1
87	28459.700	29286.4672	216.72	1/4" NEAR FLUSH W/ GROUND 50' OF N. FENCE TEMPE BEACH PARK 200' E. OF OLD MILL BRIDGE
227	28634.7396	294798.229	86.90	1/4" NEAR FLUSH W/ GROUND IN ACCESS ROAD S. BANK OF PAVATECANAL NEAR S. BORDER PAPAGO PARK PANEL PT1
1	28543.95	290432.8		1/4" NEAR FLUSH W/ GROUND IN UPPER LEVEE
2	28489.86	290470.8		1/4" NEAR FLUSH W/ GROUND IN UPPER LEVEE
3	286000.00	300250.00		1/4" NEAR FLUSH W/ GROUND IN UPPER LEVEE
4	284897.93	300548.25		1/4" NEAR FLUSH W/ GROUND IN LOWER ACCESS ROAD

ALL COORDINATES SHOWN ARE PROJECT DATUM GROUND COORDINATES
 THE COORDINATES ARE REDUCED BY 200,000 IN THE E DIRECTION AND 500,000 IN THE N DIRECTION FROM ADOT COORDINATES

283-1100
 CITY OF TEMPE
 DIVISION OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS			
CITY OF TEMPE			
DIVISION OF ENGINEERING			
P.O. BOX 1000 TEMPE, ARIZONA 85280			
PROJECT	DESCRIPTION	SCHEDULE A	DATE APRIL 1996
DESIGNED BY		GENERAL	
CHECKED BY			PROJECT NO. 246522A
SCALE 1"=80'	OVERALL PROJECT PLAN		SHEET 6 OF 8
			SEE SHEET 5-G

PRELIMINARY 90% REVIEW



LEGEND:

- EXISTING STORM DRAINS TO BE MODIFIED, SEE A-0-3
- SHEET WINDOW AREA
- DRAWING NO.
- A-P-3 LOWER RIGHT HAND CORNER

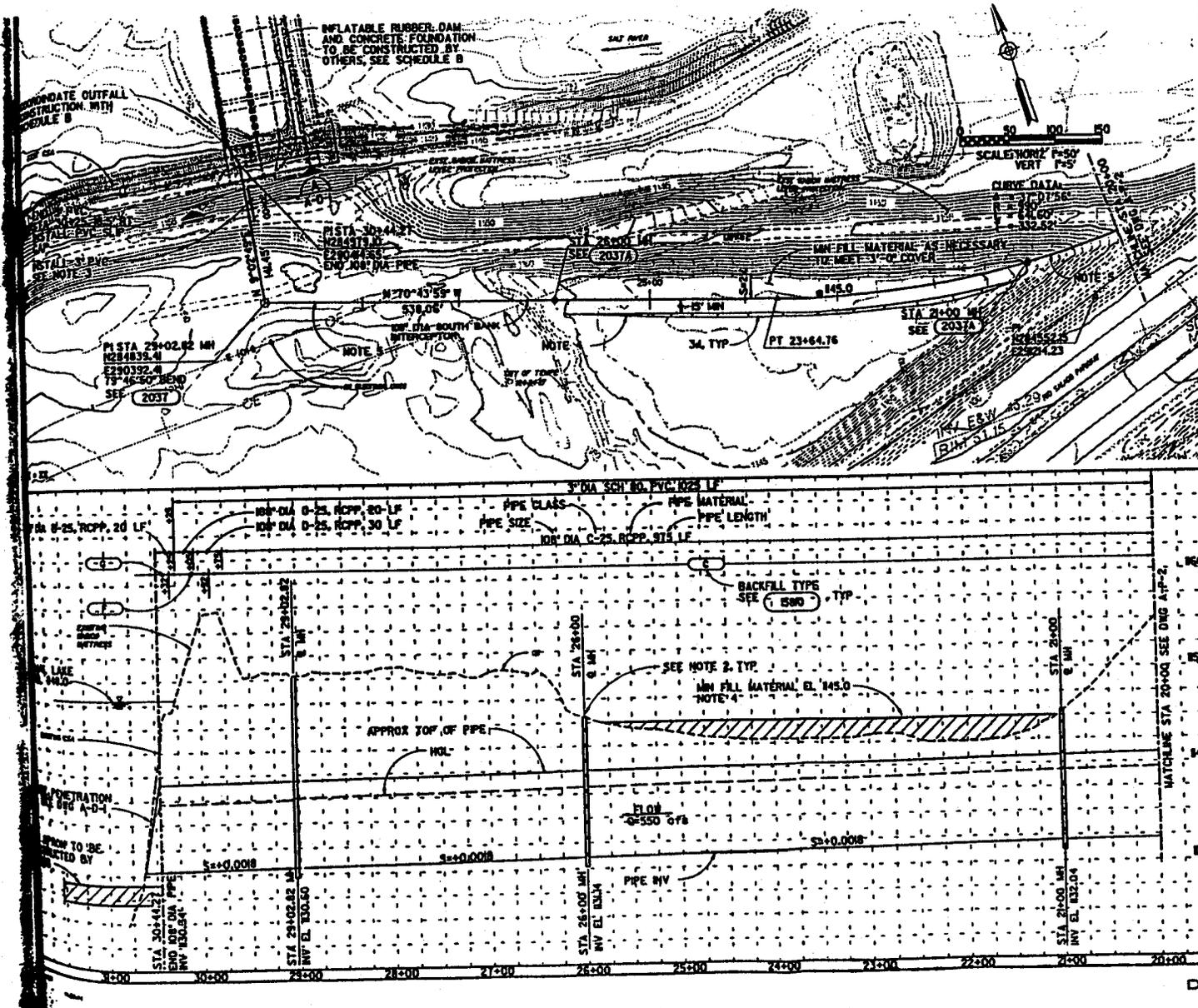
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14-FEB-1996

CONSTRUCTION NOTES



DIVISION OF PUBLIC WORKS			
CITY OF TEMPE			
DIVISION OF ENGINEERING			
P.O. BOX 5050 TEMPE, ARIZONA 85288			
DESIGNED BY	ENGINEER	SCHEDULE A GENERAL	DATE APRIL 1996
DRAWN BY	CHECKED BY	PROJECT NO.	346823A
SCALE	PK2007	SHEET NO. OF 2	SHEET NO. A-0-7

PRELIMINARY 90% REVIEW



- NOTES:
- EXCAVATE TEST PITS OR BORINGS ALONG CENTERLINE OF SB ALIGNMENT AT 50' INTERVALS FROM STA 15+50 TO STA 25+00 PRIOR TO EXCAVATING TRENCH. REFER TO SPECIFICATIONS FOR DETAILS OF TEST PIT OR BORING REQUIREMENTS.
 - TOP OF MH RISERS SHALL MATCH THE FINISHED GRADE ALONG THE PIPELINE ALIGNMENT.
 - 3" PVC WATER LINE SHALL BE PLACED IN THE SAME TRENCH AS THE 100" SB FROM STA 18+10 TO STA 30+25. REFER TO THE PIPE BACKFILL DETAIL ON DWG A-0-8.
 - RECENT GRADING ACTIVITIES MAY HAVE ALTERED GROUND SURFACE ELEVATIONS IN THIS AREA. CONTRACTOR SHALL FIELD VERIFY GROUND SURFACE ELEVATIONS.
 - LIMIT EQUIPMENT TRAFFIC OVER NEW PIPELINE FACILITIES TO HS20 LOADS. CONTRACTOR SHALL SUBMIT ACCESS PLANS FOR EQUIPMENT THAT EXCEEDS HS20 LOADS.

269-1100
CITY OF TEMPE
DIVISION OF ENGINEERING

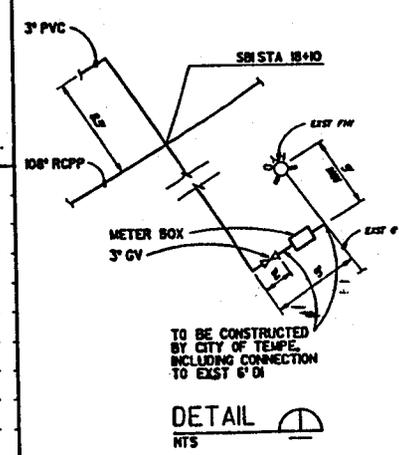
DEPARTMENT OF PUBLIC WORKS
CITY OF TEMPE
DIVISION OF ENGINEERING
P.O. BOX 3007 TEMPE, ARIZONA 85280

SURVEYED BY	DESCRIPTION	DATE	DATE
DESIGNED BY	SCHEDULE A	CIVIL	APRIL 1976
CHECKED BY	SA		
SCALE	SOUTH BANK INTERCEPTOR PLAN AND PROFILE		PROJECT NO. 946523A
			SHEET # OF #
			DWG NO. A-P-1

DCE IIMINADY 2011 01 01 01 01

CONSTRUCTION NOTES

- NOTES:
- EXISTING FARMER SD AND ASH AVE SD SHALL REMAIN IN-SERVICE UNTL. SCHEDULES A AND B ARE SUBSTANTIALLY COMPLETE.
 - EXCAVATE TEST PITS OR BORINGS ALONG CENTERLINE OF SB ALIGNMENT AT 50' INTERVALS FROM STA 15+50 TO STA 29+00 PRIOR TO EXCAVATING TRENCH. REFER TO SPECIFICATIONS FOR DETAILS OF TEST PIT OR BORING REQUIREMENTS.
 - 3" PVC WATER LINE SHALL BE PLACED IN THE SAME TRENCH AS THE 108" SB FROM STA 18+10 TO STA 30+25. REFER TO THE PIPE BACKFILL DETAIL ON DWG A-9-1.
 - LIMIT EQUIPMENT TRAFFIC OVER NEW PIPELINE FACILITIES TO HS20 LOADS. CONTRACTOR SHALL SUBMIT ACCESS PLANS FOR EQUIPMENT THAT EXCEEDS HS20 LOADS.
 - LOCATION OF EXIST 72" SD IS APPROXIMATE BASED ON THE BEST AVAILABLE RECORDS. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION PRIOR TO MATERIALS PURCHASE.



288-1100
CALL COLLECT

DEPARTMENT OF PUBLIC WORKS CITY OF TEMPE 815 18th St OF ENGINEERING		DATE APRIL, 1996
P.O. BOX 1002 TUCSON, ARIZONA 85700		PROJECT NO. 946523A
SURVEYED BY	DESCRIPTION SCHEDULE A	SHEET # OF #
DESIGNED BY	CIVIL	946523A
DRAWN BY		SHEET # OF #
CHECKED BY		946523A
SCALE 1"=50'		
SOUTH BANK INTERCEPTOR		
PLAN AND PROFILE		

