



**CITY OF TEMPE, ARIZONA
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION**

INVITATION FOR BIDS

FOR

**SEWER LINE PROJECT –
MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE**

PROJECT NO. 3221023E

APPROVED BY:

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**CITY OF TEMPE, ARIZONA
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION**

NOTICE TO CONTRACTORS

**SEWER LINE PROJECT –
MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE**

PROJECT NO. 3221023E

1. INTRODUCTION

THIS INVITATION FOR BIDS is hereby offered by the City of Tempe, an Arizona municipal corporation (“City”), for **Sewer Line Project – Mckellips Road; La Rosa Drive to Cavalier Drive**, as set forth herein, and shall be identified as **Project No. 3221023E**.

1.1 OVERVIEW OF PROJECT

Work for this project involves the **INSTALLATION OF FOUR (4) SEGMENTS, TOTALING 821 LINEAR FEET OF AN 8-INCH SEWER LINE AND THREE (3) NEW MANHOLES**.

1.2 EXAMINATION OF PREMISES, SPECIFICATIONS, AND CONTRACT

Bidder shall visit the site of the Project and shall fully acquaint itself with all conditions as they exist, so that it may fully understand the site, difficulties, and restrictions attending the execution of the work.

Bidder shall also thoroughly examine and be familiar with the specifications, plans, and the Contract documents. Failure of Bidder to obtain, receive, or examine any addenda to the proposed Contract, or to visit the site and acquaint itself with the conditions there existing, shall not relieve it from any obligation with respect to the submitted bid.

By submitting a bid, Bidder agrees that it has examined the site, specifications, plans, and Contract, and accepts, without recourse, all site conditions, the proposed Contract, and all exhibits and addenda thereto.

1.3 START OF WORK / TERM OF CONTRACT

Work shall start as soon as practicable, but not later than seven calendar days after the Notice to Proceed date and shall be completed within 140 calendar days following the Notice to Proceed date.

2. SCOPE OF WORK

The proposed work will consist of **CONSTRUCTION AND INSTALLATION OF THE FOLLOWING: SEWER PIPE, MANHOLES, CONCRETE ENCASEMENT, SIDEWALK, VALLEY GUTTER, AND SURFACE RESTORATION. THE NEW SEWER WILL CONNECT TO EXISTING SANITARY SEWER MANHOLES BOTH UPSTREAM AND DOWNSTREAM OF THE PROJECT AREA**, together with associated work.

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

Prior to the start of work, a construction progress schedule shall be required and shall comply with the requirements of MAG Specifications 108.4. In addition, a schedule update comparing actual progress with scheduled progress will be required with the submission of each monthly pay request.

2.2 UNIFORM STANDARD SPECIFICATIONS

All work done under this Contract shall be accomplished in accordance with the Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction – latest edition (“MAG Specifications”) and the City of Tempe Supplement to the MAG Uniform Standard Details and Specifications for Public Works Construction – 2014 (“City of Tempe Supplement”), except as modified in the Contract.

In the case of a discrepancy or conflict, the order in which documents and Contract sections govern is as follows, from highest to lowest: special terms and conditions, technical specifications, plans, general terms and conditions, City of Tempe Supplement, and MAG Specifications.

All bids shall be made in accordance with the General Conditions of the MAG Specifications.

2.3 CONTRACTOR'S REPRESENTATIVE

Contractor shall at all times be present at the worksite or represented by a superintendent or other properly designated agent. Instructions and information given by City construction project manager to Contractor's superintendent or agent on the work shall be considered as having been given to Contractor.

2.4 SUPERVISION BY CONTRACTOR

Contractor will supervise and direct the work. It will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor will employ and maintain on the work a qualified superintendent who shall be designated in writing by Contractor and approved by City as Contractor's representative at the site. The superintendent shall have full authority to act on

behalf of Contractor and all communications given to the superintendent shall be as binding as if given to Contractor. The superintendent shall be present on the site at all times in order to perform adequate supervision and coordination of the work. No substitution of the superintendent will be permitted without prior written request by the Contractor and written consent of City.

2.5 AUTHORITY OF CITY ENGINEER'S APPOINTED REPRESENTATIVE

City construction project manager shall act as City Engineer's designated representative during the construction period. He or she shall advise on questions concerning coordination with City, public safety, and quality and acceptability of materials and work performed. City Engineer, City construction project manager, or their assigned inspector shall interpret the intent of the Contract plans, specifications, and technical provisions in an unbiased manner.

City Engineer, City construction project manager, or their assigned inspector may be present on the site during construction to monitor the work and to maintain records for Contract management. City construction project manager shall promptly make decisions relative to the interpretation of the Contract so as to minimize delays in construction. City construction project manager will not be responsible for directing construction, control, techniques, sequence, or procedures, or for directing job safety.

2.6 BENEFICIAL OCCUPANCY

Beneficial occupancy is the use of a facility or project, in whole or in part, by City for its intended purpose. This may occur even though some work of the Contract remains undone. Prior to such use or occupancy, City will provide notice to Contractor and accomplish a partial acceptance inspection. Beneficial occupancy will apply to general right-of-way projects only.

2.7 SUBSTANTIAL COMPLETION

Substantial completion is work that is ready for occupancy and use for its intended purpose as certified by City and a certificate of occupancy. This term will be applied to building construction projects only.

2.8 PROJECT COMPLETION

Project completion is full completion of all construction associated with the Contract, including, but not limited to, punch list items, close-out documentation, operations and maintenance manuals, warranties, and record plans as certified by the architect/engineer of record. Contractor may be found in default of this Contract in accordance with MAG Specifications 108.10 should project completion fall behind substantial completion by more than 45 calendar days.

2.9 CONTRACT COMPLETION DATE

The Contract completion date established by reference to the Notice to Proceed date is for completion of all or specified portions of the work. This includes items of work to be completed under an owner allowance or as part of a contingency item. The stated Contract completion date will take into account anticipated or actual weather conditions that are not unusually severe for the area and time of year. This date may be expressed as a calendar date or as a number of calendar days after the Notice to Proceed date.

If time extensions are issued by City, the revised Contract completion date will be referred to as the adjusted Contract completion date.

2.10 FINAL INSPECTION

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 by City. Prior to final inspection on any City facilities requiring a building permit, Contractor must call for final inspection from the Community Development Department and Public Works Department of City. The final inspection must be completed prior to final acceptance and payment.

2.11 FINAL ACCEPTANCE & GUARANTEE

Final acceptance shall mean a written final acceptance of the work. City Engineer shall make the final acceptance promptly after the work has been inspected and found to be completed in accordance with the Contract. The work performed under this Contract shall be guaranteed for a period of one (1) year from the date of final acceptance.

2.12 AS-BUILT DRAWINGS

Contractor shall provide and maintain accurate field data on a redlined set of Contract drawings, which are to be kept current and submitted as complete at the conclusion of the construction. These record drawings will be used as documentation for progress payments, and upon project completion, for the preparation of record drawings by the architect/engineer. Final payment will not be issued until all record drawings are submitted by Contractor and are certified to be complete by the architect/engineer of record.

2.13 SHOP DRAWINGS, SCHEDULES, SAMPLES & PROJECT DOCUMENTATION

In time for each to serve its proper purpose and function, Contractor shall submit to City construction project manager such schedules, reports (including daily construction reports and progress meeting notes), drawings, lists, literature

samples, instructions, 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 City construction project manager as a hard copy and legible electronic PDF document of each submittal.

The submittal shall clearly indicate the specific area of the Contract for which the submittal is made. The additional copies received will be returned to Contractor's representative at the job site. City construction project manager's notations of the action 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 job site Contract, and the fabrications furnished shall be in conformance with the same.

City construction project manager's review of the above drawings, lists, prints, specifications, samples, or other data shall in no way release Contractor from its responsibility for the proper fulfillment of the requirements of this Contract, nor for fulfilling the purpose of the installation, nor from its liability to replace the same should it prove defective or fail to meet the specified requirements.

2.14 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 the Contract, and it shall be the duty of Contractor to call City construction project manager's attention to apparent errors or omissions and request instruction before proceeding with the work.

City Engineer may, through appropriate instruction, correct errors, and supply omissions. Instructions provided by City Engineer shall be as binding upon Contractor as though contained in the original Contract.

At the option of City construction project manager, material to be supplied under this Contract will be tested and/or inspected either at its place of origin or at the site of the work. Contractor shall give City construction project manager written notification well in advance of actual readiness of material 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.

2.15 EXCESS MATERIALS

Excess or unsuitable material, broken asphaltic concrete, and broken Portland cement concrete shall be disposed of by Contractor. Contractor shall, prior to commencement of the work, submit a letter to City Engineer stating the location of disposal site(s) for all excess or unsuitable material and certifying that it has obtained the property owner's permission for the disposal of all surplus material.

2.16 MISCELLANEOUS REMOVAL AND RELOCATIONS

Miscellaneous removals and relocations shall be performed by the Contractor, and is 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 removal of items of every nature and description such as pipes, concrete, asphalt, block, brick, rock, and metal, including temporary removal and reinstallation, unless such items are specifically designated in a separate bid item. In addition, certain items requiring temporary removal and reinstallation such as mailbox stands, signposts, survey monument frames and covers, shall be included in this category.

2.17 PROTECTION OF FINISHED OR PARTIALLY FINISHED WORK

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 City.

Estimate or partial payment of completed work shall not release Contractor from such responsibility prior to City's acceptance, but Contractor shall turn over the entire work in full accordance with these specifications before final payment can be made.

2.18 SURVEY CONTROL POINTS

Existing survey monuments shall be protected by Contractor or removed and replaced under the direct supervision of City of Tempe Engineering Division Land Services Section.

One week prior to construction, Contractor shall notify City of Tempe Engineering Division Land Services Section of any survey monuments that need to be relocated. Any monuments damaged or lost due to the Contractor's negligence and/or lack of notification to City of Tempe Engineering Division Land Services Section shall be replaced at Contractor's expense. In the event a lot corner will be disturbed, Contractor shall notify affected property owner(s) and obtain consent prior to any construction. Any lot corners disturbed or lost due to Contractor's negligence shall be replaced at Contractor's sole expense.

2.19 HINDRANCES AND DELAYS

Except as provided herein, no charge shall be made by Contractor for hindrances or delays from any cause during the progress of any portion of the work set forth in this Contract; however, delays due to no fault or neglect of Contractor may entitle Contractor to a time extension sufficient to compensate for the delays. The amount of the time extension, if any, shall be determined by City Engineer provided Contractor gives City Engineer immediate notice in writing of the cause of such delay.

The parties agree to negotiate in good faith for the recovery of damages related to expenses incurred by Contractor for a delay for which City is solely responsible that is unreasonable under the circumstances, and that was not within the contemplation of the parties to the Contract at the time the Contract was entered into.

2.19.1 Unless specifically provided for herein, the maximum compensation for an unreasonable or unforeseen delay shall not exceed the daily amount specified for liquidated damages in MAG Specification 108.9, as based on the original Contract amount.

2.19.2 This section shall not be construed to void any provisions of this Contract, which require notice of delays, or which provide for alternative dispute resolution, other procedures for settlement, or which provide for liquidated damages.

However, if the parties cannot reach agreement for the recovery of damages as set forth herein, the determination of City shall be final.

2.20 SUBSIDIARY WORK

All work called for in the plans and specifications shall be performed by 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.

2.21 MISCELLANEOUS WORK AND ALLOWANCES

Unless otherwise specified in the Contract, 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.

2.21.1 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.

2.21.2 Cleanup, including day-to-day cleanup.

- 2.21.3 Notification to residents adjacent to this project prior to the start of work on construction that may affect them.
- 2.21.4 Water required for compaction or dust control.
- 2.21.5 Miscellaneous removals and relocations not otherwise specified in the Technical Specifications.
- 2.21.6 Power pole bracing.
- 2.21.7 Removal of trees twelve inches (12") or less in diameter.
- 2.21.8 Removal, relocation, and/or modification of existing walls and fences.
- 2.21.9 Trimming of trees and bushes.
- 2.21.10 Replacement of plant material and repair of irrigation equipment to meet or exceed conditions existing prior to Contractor beginning work.

2.22 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 become necessary, such changes shall be made in accordance with Section 104.2 of the General Conditions in the MAG Specifications.

The costs associated with any extra work as authorized by City must be approved prior to the start of work. The final costs for additional work shall also include all charges associated with extended general conditions or Contract acceleration. Pay requests for extra work performed shall be submitted with the next billing cycle and shall not exceed 30 calendar days from the date extra work was performed.

2.23 ADDITIONAL SERVICES

Additional services that are outside the scope of basic services contained in this Contract shall not be performed by Contractor without prior written authorization from City. Additional services, when authorized by an executed Contract or an amendment to this Contract, shall be compensated for by a fee mutually agreed upon between City and Contractor.

3. SPECIAL TERMS AND CONDITIONS

3.1 PAYMENT BOND; PERFORMANCE BOND

A payment bond and a performance bond, each in an amount equal to the full contract amount, will be required of the Contractor immediately after notice of Contract award, and before final Contract execution. Each bond shall be in accordance with Arizona Revised Statutes (A.R.S.) § 34-201, *et seq.*, as amended from time to time.

Arizona law provides that the bonds shall be executed solely by a bonding company, liability insurance carrier, or excess insurance carrier that holds a certificate of authority to transact surety business in Arizona, issued by the director of the department of insurance pursuant to A.R.S. title 20, chapter 2, article 1, as amended from time to time. Additionally, the City requires that the bonding company, liability insurance carrier, or excess insurance carrier have a Financial Strength Rating of A- or better and a Financial Size Category of VII or higher, as listed in the most recent “Best’s Key Rating Guide – Property/Casualty,” published by A.M. Best Company. An individual surety or sureties shall not execute either bond, even if the requirements of A.R.S. § 7-101 are satisfied.

3.2 INSURANCE

Certificates of Insurance verifying insurance coverage that meets the following minimum requirements will be required of the Contractor immediately after notice of Contract award, and before final Contract execution.

Arizona law provides that the insurer must hold a certificate of authority to transact insurance in Arizona, issued by the director of the department of insurance pursuant to Arizona Revised Statutes, title 20, chapter 2, article 1, as amended from time to time. Additionally, the City requires that the insurance company have a Financial Strength Rating of A- or better and a Financial Size Category of VII or higher, as listed in the most recent “Best’s Key Rating Guide – Property/Casualty,” published by A.M. Best Company. This requirement does not apply to the Workers’ Compensation / Employer’s Liability portion of the Certificate of Insurance.

3.2.1 Contractor shall maintain limits no less than:

3.2.1.1 **Commercial General Liability:** \$2,000,000 combined single limit per occurrence for bodily injury and property damage, including coverage for contractual liability (including defense expense coverage for additional insureds), premises/operations, underground explosion and collapse hazard, personal injury, broad form property damage, products and completed operations, independent contractors, and product liability. The general aggregate limit shall

apply separately to this project/location, or the general aggregate shall be twice the required occurrence limit.

3.2.1.2 **Automobile Liability**: \$1,000,000 combined single limit per accident for bodily injury and property damage, including coverage for owned, hired, and non-owned vehicles as applicable.

3.2.1.3 **Excess Liability (umbrella form)**: As required.

3.2.1.4 **Workers' Compensation and Employer's Liability**: Workers' Compensation and Employer's Liability statutory limits as required by the State of Arizona.

3.2.1.5 **Health Insurance**: As required by City.

City shall have no responsibility or liability for such insurance coverage.

3.2.2 Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared and approved by City. At the option of City, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City, its officials, employees, and volunteers, or Contractor shall procure a bond guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

3.2.3 Other Insurance Provisions

The policies or self-insurance certifications are to contain, or be endorsed to contain, the following provisions:

3.2.3.1 Commercial General Liability and Automobile Liability Coverage

City, its officers, officials, employees, agents, and volunteers are to be covered as additional insureds with respect to: liability arising out of activities performed by or on behalf of Contractor including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor; or automobiles owned, leased, hired, or borrowed by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, officials, employees, agents, or volunteers, for work related to Contractors', employees', agents', subcontractors', or sub-subcontractors' activities.

Contractor's insurance coverage shall be primary with respect to City, its officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by City, its officials, employees, or volunteers shall be in excess of Contractor's insurance and shall not contribute to it.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, officials, employees, agents, or volunteers.

Coverage shall state that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.2.3.2 Workers' Compensation and Employer's Liability Coverage

The insurer shall agree to waive all rights of subrogation against City, its officers, officials, employees, agents, and volunteers for losses arising from work performed by Contractor for City.

3.2.3.3 Health Insurance Requirements

All Contractors who enter into a contract in excess of \$30,000 with City must certify that Contractors have, and all of their subcontractors will have, health insurance for all project employees. Health insurance must be offered to eligible dependents of all such employees. An affidavit must be signed in the form included herein (Exhibit 7.10). Major subcontractors are defined as entities doing work in excess of \$30,000 as determined at the start of each project. All required health insurance must be maintained during the entire time of the Contract with the City.

Health insurance is required for all Contractor and major subcontractor employees who work more than 120 calendar days in any calendar year. A "workday" consists of any time within a 24-hour period, regardless of the number of hours that the individual is paid. At this time, health insurance is not required for temporary employees or students working part-time who are enrolled in a recognized educational institution.

The health insurance requirements shall apply to all employees directly involved with this City project including support and administrative personnel.

All complaints concerning violations of the health insurance requirements shall be filed, in writing, with the Public Works

Department, within 30 calendar days from discovery of the violation. An administrative hearing will be held before the Public Works Director, and a written decision of findings will be provided to the parties to the hearing within 14 calendar days thereafter. Appeal from the decision of the Public Works Director may be made within 14 calendar days of the date of the decision by filing a notice of appeal in writing with the Public Works Department. If an appeal is timely filed, an administrative hearing will be held before an administrative hearing officer appointed by the City Manager. The decision of the administrative hearing officer shall be final.

In the event of a finding of violation of the insurance provisions, the company in violation of the provision shall be barred from bidding on, or entering into, any Public Works contract with City for a period of three (3) years from the execution of the Contract.

All Contractors subject to the health insurance requirements shall post, in English and Spanish, notice of the health insurance requirements at its office and at the job site.

3.2.3.4 All Coverages

Each insurance policy required by this Contract shall be endorsed to state that the coverage shall not be suspended, voided, and/or canceled by either party, reduced in coverage or in limits, except after 30 calendar days' prior written notice by certified mail, return receipt requested, has been given to City.

3.2.4 Other Insurance Requirements

Contractor shall:

3.2.4.1 Immediately after notice of Contract award, and before final Contract execution, furnish City with certificates of insurance, in form and with insurers acceptable to City, which shall clearly evidence all insurance required in this Contract and provide that such insurance shall not be canceled, allowed to expire, or be materially reduced in coverage except on 30 calendar days' prior written notice by certified mail to City, and in accord with stated insurance requirements of this bid solicitation. MAG Specification 103.6 is fully incorporated into this Contract, except to the extent it conflicts with the limits set forth in this Contract. The insurance policies required by MAG Specification 103.6 shall additionally provide full coverage of indemnity to City, including an increase in the minimum limits to \$2,000,000 combined single limit coverage for General Liability. Prior to execution of the Contract, Contractor

shall furnish City with a Certificate of Insurance as evidence that policies providing the required coverages, conditions, and limits are in full force and effect. Such certificates shall identify the project and shall provide for not less than 30 calendar days' advance written notice to City, by certified mail, of cancellation or termination. Any cancellation clause shall not include the phrases "endeavor to" or "but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives." City shall not be obligated, however, to review same or to advise Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed waiver of City's right to insist on, strict fulfillment of Contractor's obligations under this Contract.

3.2.4.2 Provide certified copies of endorsements and policies if requested by City in addition to certificates of insurance.

3.2.4.3 Replace certificates, policies, and endorsements for any such insurance expiring prior to completion of services.

3.2.4.4 Maintain such insurance from the time services commence until services are completed. Should any required insurance lapse during the Contract term, requests for payments originating after such lapse shall not be processed until City receives satisfactory evidence of reinstated coverage as required by this Contract, effective as of the lapse date. If insurance is not reinstated, City may at its sole option, terminate this Contract effective on the date of such lapse of insurance.

3.2.5 Subcontractors and Sub-Subcontractors

Contractor shall include all subcontractors and sub-subcontractors as insureds under its policies. All coverage for subcontractors and sub-subcontractors shall be subject to all of the requirements stated herein for Contractor.

3.3 INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless City, its officers, and its employees, from liabilities, damages, losses, and costs, including reasonable attorney fees and court costs, to the extent caused by the negligence, recklessness or intentional wrongful conduct of Contractor, its subcontractors, design professionals, or other persons employed or used by Contractor in the performance of the contract or subcontract. Nothing in this section shall prohibit the requirement of insurance coverage that complies with this section, including the designation of any person as an additional insured on a

general liability insurance policy or as a designated insured on an automobile liability policy. The amount and type of insurance coverage requirement set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

3.4 PAYMENT

City shall make payment to Contractor pursuant to A.R.S. § 34-221 and MAG Specifications 109.

3.4.1 Measurement of Payment

3.4.1.1 Quantities of materials for this work shall be paid under the appropriate schedule at the applicable Contract price per unit of measurement with no allowances for waste.

3.4.1.2 Payment for various items in the bid shall be compensation in full for furnishing all materials, labor, tools, equipment, and appurtenances necessary to complete the work in a satisfactory manner as specified. No additional payment will be made for work related to any item unless specifically called for in the bid.

3.4.1.3 Materials placed without approval of the inspector, or materials rejected due to improper placing, improper proportions of materials, or materials found to be defective, will not be paid for.

3.4.2 Payment Requests

Payment requests shall be submitted by Contractor through the City's PMWeb Software System. Requests shall be uploaded to the PMWeb Software System at <https://tempe-az.pmweb.com/pmweb/> using a login provided to Contractor by City, and Contractor shall include all supporting documentation for work performed during the payment period.

Payment requests submitted with insufficient documentation to verify work effort and quantities will be returned to Contractor for revision. Revised payment requests shall be re-submitted to City electronically through the City's PMWeb Software System.

Contractor shall submit its first request for payment no later than 40 calendar days from the Notice to Proceed date. All subsequent requests for payment shall be made on a monthly basis and no later than every 30 calendar days.

3.5 PRE-CONSTRUCTION MEETING

Contractor shall meet with the City Engineer for a preconstruction conference prior to commencing work. At the preconstruction conference, Contractor shall submit a progress schedule showing the order in which Contractor proposes to carry out the work; the dates on which Contractor and its subcontractors will start the salient features of the work, including procurement of materials, equipment, etc.; the ordering of articles of special manufacture; the furnishing of drawings, plans, and other data for the review and approval of the City Engineer; the inspection of structural steel fabrication; and the contemplated dates for the completion of the said salient features. The schedule may be in a bar chart format or a critical path method format. No schedule activity shall be shorter than one day or longer than 15 working days. The schedule must show interrelationships among the activities, and the controlling items of work throughout the project shall be identified. If requested by the City Engineer, Contractor shall furnish information needed to justify activity time durations. Such information shall include estimated manpower, equipment, unit quantities, and production rates. The schedule shall illustrate the completion of the work not later than the contract completion date.

Contractor shall furnish authorized signature forms and a list of Contractor's proposed subcontractors and major material suppliers.

Progress schedules shall have considered the time requirement for ordering articles of special manufacture to meet specific requirements of the work when structural steel fabrication inspection is required.

Contractor shall submit a traffic control plan in accordance with the subsection of Special Terms and Conditions titled Traffic Control.

Contractor shall also submit a safety plan and designate an employee as Safety Supervisor, in accordance with ADOT Standard Specifications Subsection 107.08. If approved by the City Engineer, Contractor may designate one employee to be responsible for both the traffic control and safety plans.

If the project requires that Contractor or City personnel to work from falsework, within shoring, or in any other hazardous area, Contractor shall submit as part of Contractor's safety plan specific measures it will use to ensure worker safety.

Contractor shall also submit a program for erosion control and pollution prevention, as set forth in ADOT Standard Specifications Subsection 104.09, on all projects involving clearing and grubbing, earthwork, structural work, or other construction, when such work is likely to create erosion or pollution problems.

If Contractor fails to provide the required submissions, the City Engineer may order the preconstruction conference suspended until such time as they are furnished. Work shall not begin until the preconstruction conference has been concluded and

the safety plan has been approved, unless authorized by the City Engineer. Contractor shall not be entitled to additional compensation or an extension of contract time resulting from any delays due to such a suspension.

When the specifications require specific quality control measures for certain materials, Contractor shall designate a qualified employee as Quality Control Manager. The Quality Control Manager shall be responsible for the implementing and monitoring of the quality control requirements described in ADOT Standard Specifications Subsection 106.04(C).

3.6 CONTRACT EXTENSION

The prices bid in this Contract will be maintained for any extension period unless Contractor can demonstrate, to the satisfaction of City, that the cost of their materials or service has increased. All work set forth in this Contract will be completed or scheduled for completion prior to any extension being granted.

3.7 SUBLETTING OF CONTRACT

In accordance with MAG Specifications Section 108, Contractor shall perform, with Contractor's own organization, construction work that amounts to not less than fifty percent (50%) of the total Contract price for pipeline construction, roadway construction, or roadway maintenance.

3.8 LICENSES

The low bidder and all subcontractors must carry the appropriate State of Arizona contractor's license(s) for the proposed work prior to award of the Contract. Should the lowest responsive bidder not be able to obtain the required license(s), the project may be awarded to the next lowest responsive bidder who has the required license(s).

3.9 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, Contractor will obtain a Maricopa County Air Quality Department permit as required under Rule 200 of the Maricopa County Air Pollution Control Rules and Regulations. 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 City for review prior to County submittal to ensure that all elements of the planned operation are covered. Please contact the Maricopa County Air Quality Department at 602-506-6010 for additional details.

In addition, all Contractors hauling fill or excavation materials where the haul exceeds five thousand (5,000) cubic yards, or when the duration of the haul is more

than 14 calendar days, are required to obtain a City haul permit before the hauling operation begins.

Prior to receiving a hauling permit, Contractor must submit the required certificate of insurance, a plan showing the proposed haul routes, and a complete schedule of the hauling operation to the City Transportation Division. Prior to submittal, Contractor should contact Engineering Services for complete details for issuance of a City haul permit.

3.10 LANDSCAPING AND IRRIGATION REQUIREMENTS

As applicable, Contractor shall be required to construct the landscape and irrigation improvements in accordance with the requirements of MAG Specifications Sections 430, 440, and 795, and the City of Tempe Public Works Department Standard Landscape and Irrigation Details and Specifications, latest edition (available online at <https://www.tempe.gov/government/public-works/engineering/standards-details>). In addition, the landscape plant establishment and maintenance period will be 90 calendar days.

3.11 SPECIFIC PRODUCTS OR BRANDS

In accordance with MAG Specification 106.4, specific brands and/or models of equipment, materials, or patented processes listed in the plans, specifications, standard details, and standard specifications are for demonstrative purposes only. They should not be construed as a sole source request for a specific product or brand. Contractor shall provide City with the required product data including, but not limited to, manufacturers' standard catalog cuts, brochures, diagrams, schedules, performance charts, illustrations, calculations, schematic drawings, printed installation, erection, application, and placing instructions, and other descriptive data related to the product in order for City to determine if the product is equivalent to the product listed for approval.

3.12 ENVIRONMENTAL REQUIREMENTS

3.12.1 Contractor covenants and agrees that it shall, at all times during the term of the Contract, and at its sole cost and expense, comply with and assume sole responsibility and liability under all environmental laws applicable to use of or operations at the project site by Contractor, its agents, assigns, and/or employees. Contractor agrees that should it or any of its agents, assigns, or employees know of (a) any violation of environmental laws relating to the project site, or (b) the escape, release, or threatened release of any hazardous materials in, on, under, or about the project site, Contractor shall promptly notify City in writing of such, and that it will provide all warnings of exposure to hazardous materials in, on, under, or about the project site, in strict compliance with all applicable environmental laws. Further, Contractor covenants and agrees that it shall at no time use, analyze,

generate, manufacture, produce, transport, store, treat, release, dispose of, or permit the escape of, or otherwise deposit in, on, under, or about the project site, any hazardous materials, or permit or allow any of its agents, assigns, or employees to do so. Prior to use of the project site, Contractor shall provide City an inventory of all equipment and materials stored and/or to be stored at the project site.

3.12.2 For purposes of this Contract, hazardous materials shall include but is not limited to, any and all substances, chemicals, wastes, sewage, or other materials that are now or hereafter regulated, controlled, or prohibited by any environmental laws, including, without limitation, any (a) substance defined as a “hazardous substance”, “extremely hazardous substance”, “hazardous material”, “hazardous chemical”, “hazardous waste”, “toxic substance”, or “air pollutant” by federal laws, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601, *et seq.*; the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*; the Hazardous Materials Transportation Act, 49 U.S.C. § 1801, *et seq.*, the Toxic Substances Control Act, 15 U.S.C. § 2601, *et seq.*, and all amendments thereto or other similar governmental restrictions; and (b) any chemical, compound, material, substance, or other matter that: (i) is a flammable explosive, asbestos, radioactive material, nuclear material, drug, vaccine, bacteria, virus, hazardous waste, toxic substance, injurious by itself or in combination with other materials; (ii) is controlled, designated in, or governed by any hazardous materials laws; (iii) gives rise to any reporting, notice, or publication requirements under any hazardous materials laws; or (iv) gives rise to any liability, responsibility, or duty on the part of City or Contractor with respect to any third person under any hazardous materials laws.

3.12.3 In addition, Contractor must comply with the following requirements:

3.12.3.1 Non-pick-up sweepers will not be allowed except as required to make joints during chip sealing operations.

3.12.3.2 Water flooding of trenches with potable water will not be permitted.

3.12.3.3 All paints applied by sprayers shall be of a water-based type.

3.12.3.4 Provisions shall be made to prevent the discharge of construction silt, mud, and debris into City storm drains or streets.

3.12.3.5 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.

- 3.12.3.6 Concrete waste must be disposed of in an approved location and at least twenty-five (25) feet from established landscaping.
- 3.12.3.7 City refuse roll-off containers shall be used on City projects unless otherwise directed by the City of Tempe Solid Waste Supervisor. If you should have any questions concerning any of the requirements or charges, please contact the Solid Waste Supervisor, at 480-350-8268.
- 3.12.3.8 Hazardous waste shall not be discharged into City's sanitary sewers or storm drainage system. All waste products shall be disposed of in accordance with applicable regulations.
- 3.12.3.9 When archaeological features are encountered or unearthed, Contractor shall promptly report to the Director of the Arizona State Museum and to City. Excavation shall not resume in the identified area until approved by City Engineer.
- 3.12.3.10 Contractor shall take whatever steps, procedures, or means to prevent abnormal, material spillage, or tracking conditions due to their 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 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 Maricopa County at 602-506-6700 for details.
- 3.12.3.11 Contractor shall comply with all applicable federal regulations concerning National Pollutant Discharge Elimination System (NPDES) permits for storm discharges from construction sites.
- 3.12.3.12 All materials supplied by Contractor shall be one hundred percent (100%) asbestos free unless otherwise approved by City.

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 that meet project specifications is encouraged.

3.13 SAFETY REQUIREMENTS

Contractor shall comply with all applicable federal, state, and local health and safety regulations, ordinances, and requirements including, but not limited to, the

Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq.*), and all rules, regulations, and orders adopted pursuant thereto.

3.14 TRAFFIC CONTROL

3.14.1 All traffic shall be regulated in accordance with the MAG Specifications; the City of Tempe Traffic Barricade Manual, latest edition; the Manual on Uniform Traffic Control Devices (MUTCD); and any special provisions included herein.

At the time of the pre-construction conference, Contractor shall designate an American Traffic Safety Services Association (ATSSA) certified individual, who is well qualified and experienced in construction traffic control and safety, to be responsible for implementing, monitoring, and altering traffic control measures, as necessary, to ensure that traffic is carried through the work area in an effective manner and that motorists, pedestrians, bicyclists, and workers are protected from hazard including, but not limited to, motor vehicle accidents. City shall designate a representative who will oversee and monitor Contractor's agent and enforce City's requirements set forth herein. Contractor covenants to give City any assignment and/or assurances which may be necessary to effect such right of direct enforcement.

Contractor is solely responsible for, and assumes full liability for, the traffic control relating to this project. Contractor shall submit a final traffic control plan to City for its review and approval no less than one (1) week prior to commencing work under this Contract. Traffic, as referenced herein, shall include any and all motor vehicles, bicyclists, and pedestrian traffic on roadways, sidewalks, bicycle paths, alleys, and/or rights of way at, attendant to, and/or adjacent to the Project.

In the event alteration of traffic control is required for work or services provided herein, alterations shall be made in accordance with the latest edition of Part VI of the Manual on Uniform Traffic Control Devices, "Traffic Control for Streets and Highway Construction and Maintenance Operations," or the City of Tempe Traffic Barricade Manual, latest edition. The most restrictive provision shall apply. Unless identified otherwise in the Technical Specifications, City will undertake no responsibility or expenses relating to measurement, payment, or alteration of traffic control. All costs or expenses related to traffic control shall be considered incidental to other pay items. Any and all revisions relating to traffic and/or traffic control shall be submitted to City for review and approval in City's sole discretion.

Contractor is solely responsible for any and all loss, damage, replacement, or repair necessitated to any traffic signal equipment, traffic signal conduit,

and/or circuits, arising from or relating to Contractor's work or services performed hereunder. Contractor shall have all repairs performed immediately at its sole expense by a licensed electrical contractor with experience in traffic signal repair, subject to pre-approval by City. Any and all repairs and/or replacement costs expended by City in this regard shall be reimbursed by Contractor at twice City's actual cost.

Contractor shall notify all adjacent or affected residents or businesses at least forty-eight (48) hours in advance of any street, alley, sidewalk, and/or driveway closures or modifications, and make suitable arrangements to have all vehicles moved to a satisfactory location outside the closed area. Pedestrian access shall be maintained along the length of the project at all times per the requirements of the Americans with Disabilities Act and as approved by City. Contractor shall abide by applicable speed limits. Additional information may be obtained by contacting the City Transportation Division at 480-350-8219.

3.14.2 Temporary Barricades

Temporary barricades shall be regulated in accordance with the City of Tempe Traffic Barricade Manual, latest edition.

No additional payment by City will be made to Contractor or its subcontractor for temporary barricades, unless otherwise specified in the bid.

3.15 CLEAN-UP

Contractor agrees and covenants to adequately protect the work site, adjacent property, and the public in all phases of the work and/or services provided herein. Contractor shall be solely responsible for all damages or injuries due to action or neglect pursuant to this section. Contractor shall maintain access to all phases of the project pending inspection by City. Contractor hereby agrees to the following as to the job site: The project limits shall be cleaned of all trash, debris, construction materials and equipment at the completion of each workday. No equipment, vehicles or materials shall be stored on site during non-working hours, holidays or non-working days unless otherwise approved by the City Engineer or designee. No payment shall be made for this work; the cost being considered included in other items of work. All new construction shall be completed within the right-of-way or temporary construction easement areas shown on the project plans. Contractor agrees to continually keep the job site free from debris, waste, and accumulation of materials; immediately clean up any oil, fuel, or chemical spills and take any and all remediation necessary; keep machinery clean and free of weeds and debris; remove all construction stains, smears, and debris from finished surfaces; perform site preparation to limit the spread of weeds, debris, and other nuisances prior to submission of final invoice to City; and remove all equipment, materials, tools, and

Contractor's personal property prior to submission of final invoice to City.

In accordance with MAG Specifications Section 105, Contractor shall respond within twenty-four (24) hours after notice by City of any defects and/or maintenance requests to immediately remedy the condition of the job site. Should Contractor fail to respond promptly as set forth herein, City shall correct the job site at the expense of Contractor and recover all attendant costs.

3.16 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 Invitation for Bids, are only approximate and are to be used solely for the purpose of comparing, on a consistent basis, the bids offered for the work under this Contract. Contractor further agrees that City will not be held responsible for 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 Contractor from the execution and completion of the whole or any part of the work in accordance with the plans and specifications herein mentioned, and for the prices herein agreed upon and fixed therefore, or excuse Contractor from any of the obligations or liabilities hereunder, or entitle Contractor to any damages or compensation, except as may be provided for in this Contract.

3.17 ARIZONA 811 & CALL BEFORE YOU DIG

Contractor is required to use Arizona 811, at 602-263-1100, to comply with the statutory requirements in A.R.S. title 40, chapter 2, article 6.3 (Underground Facilities); A.R.S. § 40-360.21, *et seq.*, as amended from time to time.

Where railroad property may be impacted, Contractor must also notify and secure a current Call Before You Dig (CBUD) Ticket at 1-800-336-9193 from Union Pacific Railroad's Response Management Communications Center (RMCC), wait for the site to be marked, respect all markings, and dig with care.

3.18 PROTECTION OF EXISTING FACILITIES

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

3.19 UNDERGROUND UTILITIES

Underground utilities indicated on the plans are in accordance with maps furnished by City and by each utility company. The locations are approximate and require verification prior to construction, as mandated by the City of Tempe Utility Permit and Construction Manual, latest edition, available at <https://www.tempe.gov/government/public-works/engineering/utility-plan-review-inspection>

3.20 RELOCATION OF UTILITIES

All utilities in conflict with the new work will be relocated by the utility company, except as otherwise provided in the plans and specifications.

3.21 NOTIFICATION OF PROPERTY OWNERS

Contractor shall notify all property owners who may be affected by the proposed construction activities of the scope and duration of the construction activities at least forty-eight (48) hours in advance of the start of any work or construction.

3.22 ACCESS

Contractor shall maintain public access to businesses adjacent to the job site at all times during construction. Where property has more than one access point, no more than one access point shall be restricted or closed at any one time. If only one driveway exists, access shall be maintained to at least one-half of the driveway at all times. Access to adjacent private driveways shall be maintained by Contractor during all non-working hours.

3.23 UTILITY AND PUBLIC AGENCY CONSTRUCTION CLEARANCE AGREEMENT

Utilities and other public agencies may require all contractors, if working on their facilities, to sign a standard form "Construction Clearance Agreement," or other form of agreement, prior to issuance of a license. Contractor shall execute the Construction Clearance Agreement with the utility or public agency, if required, and furnish a copy to City prior to proceeding with any construction on utility or public agency facilities. 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 Contractor to comply with all applicable federal, state, and local laws, rules, regulations, and ordinances including, but not limited to, the OSHA Permit Required Confined Space rules, as amended.

3.24 GOVERNMENT APPROVALS AND PERMITS

- 3.24.1 Unless otherwise provided, Contractor shall obtain all necessary permits, approvals, and licenses required for the commencement of the work from any government or quasi-government entity having jurisdiction over the project at its sole expense. Contractor expressly covenants and agrees that it will obtain any and all necessary environmental permits and/or file the necessary environmental notices at its cost prior to undertaking work or performing services hereunder.
- 3.24.2 Copies of all permits and notices shall be provided to City prior to starting any work or performing services pursuant to the permitted activity. This provision does not constitute an assumption by City of an obligation of any kind for violation of said permit or notice requirements.
- 3.24.3 City agrees to be responsible for City's own review and permit(s) fees for building and demolition permits only. In addition, City shall bear its own review fees for grading and drainage, water, sewer, and landscaping. City may agree to pay utility design fees for permanent services in its sole discretion. Contractor shall be solely responsible for any and all other permit(s) and review fees not specifically designated herein.
- 3.24.4 Contractor is responsible for all costs of water meter(s), water and sewer taps, fire lines and taps, and all water bills on the project meters until completion of the project. Arrangements for water at the site or for construction purposes are the Contractor's sole responsibility.

3.25 KEY CONTACTS

During the bidding process, any questions shall be submitted to contractor_support@tempe.gov

Arizona 811	602-263-1100
Call Before You Dig (UPRR)	800-336-9193

3.26 DUST PREVENTION

Contractor shall take all necessary steps to ensure dust-free conditions on property within the City to the satisfaction of the City Engineer, and fully comply with A.R.S. § 49-474.06 and Maricopa County Air Pollution Control Rules and Regulations Rule 200 § 305-306, concerning dust-generating operations as defined by Maricopa County Rule 310. 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, Contractor shall obtain a Maricopa County dust control permit. Contractor shall provide assurance that subcontractors used on the dust-generating portion of the Project are registered with the Maricopa County Air Quality Department and that only certified PM-10 efficient street sweepers shall be used to sweep City streets, as required by Tempe City Code Sec. 26A-25. Contractor shall provide its

subcontractor(s)' registration number and dust control plan, if applicable, to the City Engineer prior to engaging in any dust-generating activities. Project related hauling activities to and/or from storage located on property owned by City shall be listed on the approved dust control permit and shall be subject to control measures in the approved dust control plan. When hauling fill or excavation materials exceeding five thousand (5,000) cubic yards or when the duration of the haul is more than 14 calendar days, Contractor shall obtain a City haul permit before the hauling operation begins. Prior to receiving a haul permit, Contractor must submit the required certificate of insurance, a plan showing the proposed haul routes, and a complete schedule of the hauling operation to the City Engineer. All costs associated with the submittal, approval, and implementation of the permit and dust control plan as approved by Maricopa County Air Quality Department shall be borne solely by the Contractor. Failure to fully comply with this provision shall be considered a material breach of the Contract and shall subject the Contract to termination by the City, in addition to other legal remedies.

3.27 COMPLAINTS FROM THE GENERAL PUBLIC

Contractor shall respond to any and all claims or complaints from the general public in a reasonable and prompt manner. Information on any complaint shall be reported to the Project Manager promptly, but in no event more than forty-eight (48) hours of receipt of complaint.

3.28 SECURE FACILITY ACCESS

Contracts that call for work to be done in any of the City's secure facilities are subject to the City's Secure Facility Access Requirements, which are incorporated herein.

4. INSTRUCTION TO BIDDERS

4.1. SEALED BIDS

All bids **MUST** be submitted through the City's PMWeb Software System at:

<https://tempe-az.pmweb.com/pmweb/>

and must be received by 9:00 a.m. (Arizona time) January 29, 2025. At that time, bids will be electronically opened, the name of the bidder, the date and time the submittal was received, and amount of the bid will be publicly read online in an electronic meeting room. **You are required to register as a Plan holder and receive your login credentials for the City's PMWeb Software System no later than two (2) business days prior to the Bid Opening Date.** All registered Plan holders for this project will be provided a link to this electronic meeting room the morning of the bid opening. Bids received after the time specified will not be accepted.

All bids received, will be opened, documented and posted on the City of Tempe

Engineering website within one hour of the bid opening at <https://www.tempe.gov/government/public-works/engineering/bid-results>

The Bidder assumes the responsibility for having the bid submitted on time via the City's PMWeb Software System shown above. Users submitting a bid after the Bid Due Date and Time will not have the ability to submit a bid through the City's PMWeb Software System and will not be considered. The Bidder assumes the risk of any delay in the electronic processing of the Contractor's submittal through both parties (Contractor and City) networks. Bidders must allow adequate time to ensure that the bid is received timely by the City's PMWeb Software System at <https://tempe-az.pmweb.com/pmweb/> All times referenced are Tempe, Arizona local times. Bidders agree to accept the time and date that is recorded on the received bid as the official time.

All documents required as part of the "bid package" shall be completed, scanned in a PDF format, and added as an attachment through the City's PMWeb Software System. Any bid documents received in the .zip format will be rejected by the City's server, and the bid will be deemed nonresponsive.

Please see the BIDDER'S CHECK SHEET in the Exhibits section of this Invitation for Bid.

Each bid shall be accompanied by a scanned copy of a bid guarantee for ten percent (10%) of the amount of the bid. See the subsection of Instructions to Bidders titled Bid Security. The bidder must supply the original bid bond upon request.

Each bid shall also be accompanied by the bidder's current loss history information from all of the bidder's insurance carriers. The information specific to workers' compensation insurance carriers must include a three-year (3-year) history of the bidder's Experience Modification Factor (EMOD) and its loss ratio.

In addition, each bidder is required to submit an affidavit certifying that its company and all of its subcontractors, defined as doing work in excess of \$30,000 as determined at the start of each project, will have and will continue to have during the course of the Contract, health insurance in force for all project employees. The employer must also offer insurance to project employees for their eligible dependents.

Plans and specifications are available for download from the City of Tempe Engineering Division at www.tempe.gov/engprojectsbidding When the documents are downloaded, **Contractors are required to register on-line as a Plan holder to receive notification of project addenda and login credentials to the City's PMWeb Software System no later than two (2) business days prior to the Bid Opening Date.** If addenda are issued for this project the City of Tempe will attempt to notify plan holders at the email address provided. It is the

Contractor's sole responsibility to confirm that they have received all addenda prior to submitting a bid. The City is not responsible for providing notification or addenda to Contractors.

When it is in the best interests of the City of Tempe, the City may cancel this solicitation, or may reject any and all bids in whole or in part, or may waive any informalities in the bids received.

Award will be made, or bids rejected within 60 calendar days after bid opening.

During the bidding process, any questions shall be submitted to contractor_support@tempe.gov no later than 4:00 p.m., January 22, 2025. Any questions submitted after this deadline will not be considered.

Anyone wishing to receive future notices through automatic notification by email can register their company name and email address at <https://email.tempe.gov/requests-for-engineering-bids>

4.2. ADDENDA

Addenda issued prior to the deadline for bidding shall be attached to and made a part of the Contract. Contractor shall acknowledge receipt of all addenda on the Competitive Sealed Bid form – (Exhibit 7.2).

4.3. BID SECURITY

Each bid shall be accompanied by a copy of a bid guarantee for ten percent (10%) of the amount of the bid, executed in accordance with the requirements of A.R.S. § 34-201, *et seq.*, as amended from time to time. The bid guarantee shall be in the form of a certified check, cashier's check, or surety bond. If a surety bond is used, the bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in Arizona, issued by the director of the department of insurance pursuant to Arizona Revised Statutes, title 20, chapter 2, article 1, as amended from time to time. The surety bond shall not be executed by an individual surety or sureties, even if the requirements of A.R.S. § 7-101 are satisfied. Additionally, the City requires that a bonding company, liability insurance carrier, or excess insurance carrier issuing a surety bond have a Financial Strength Rating of A- or better and a Financial Size Category of VII or higher, as listed in the most recent "Best's Key Rating Guide – Property/Casualty," published by A.M. Best Company.

Original bid guarantees shall be available upon request by the City.

4.4. **BIDS**

Bids shall be properly executed upon the Competitive Sealed Bid Forms attached and made a part of this Contract. The completed forms shall be without interlineations, alterations, or erasures. Unit prices should be rounded to the nearest whole cent (two spaces behind the decimal point). 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 bids will not be considered except as called for. No oral or electronic bids or modifications will be considered.

4.5. **IRREGULAR BIDS**

Bids 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 City.

4.6. **BIDDING PHASE REQUIREMENTS**

4.6.1. Pursuant to A.R.S. § 1-502, any individual/sole proprietor (unincorporated business) who responds to this Invitation for Bids by signing the Competitive Sealed Bid Forms shall also sign a sworn Affidavit Demonstrating Lawful Presence in the United States see (Exhibit 7.13) and present a photocopy of one of the documents listed on the affidavit to verify lawful presence in the United States. Failure to sign said affidavit and present one of the listed documents **shall result in rejection of the bid.**

4.6.2. Each bid shall be accompanied by the bidder's current loss history information from all of the bidder's insurance carriers. The information specific to workers' compensation insurance carriers must include a three-year (3-year) history of the bidder's Experience Modification Factor (EMOD) and its loss ratio. This information must be provided with the bidder's proposal.

4.7. **PRE-CONTRACT AWARD REQUIREMENTS**

4.7.1. Contractor shall provide a copy of its written health and safety program and any required employee training records or certificates.

4.7.2. Taxes. All applicable taxes due and owing by Contractor and all subcontractors shall be considered by City in determining award. At all times, the determination of applicable taxes and rates, and remitting taxes owed, shall be the sole responsibility of Contractor.

It is the sole responsibility of the Contractor and any subcontractors to obtain a Letter of Good Standing from the Arizona Department of Revenue prior to Contract award. Go to <https://azdor.gov/forms/collections-forms/tax-clearance-application> and obtain directions regarding how to submit for the Letter of Good Standing. Submit a copy of the Letter of Good Standing to contractor_support@tempe.gov The Letter of Good Standing must have been issued within the last 90 calendar days from the award date of the contract. Contractor must complete (Exhibit 7.5).

In the event a “denial” letter is received from the Arizona Department of Revenue, should any taxes owed by Contractor, or any subcontractors not be remitted in full prior to Contract award along with the receipt of a Letter of Good Standing from Contractor and each subcontractor, the bid shall be considered non-responsive and rejected by the City.

4.8. BID QUANTITIES

The quantities listed in the specifications are for bid purposes. The actual quantities provided to Contractor may be adjusted to accommodate field requirements.

4.9. PROTEST PROCEDURE

A bidder or contractor who believes they are aggrieved in connection with the City’s solicitation or award of a contract may file a protest with the Engineering Division procurement office, as set forth in Section 26A-21 of the Tempe City Code.

5. EVALUATION AND AWARD

5.1. AWARD AND EXECUTION OF CONTRACT

Except as provided herein to the contrary, the respective rights and remedies of the parties to this Contract shall be cumulative and in addition to any rights and remedies not specified in this Contract. It is understood that there are no oral or written agreements or representations between the parties hereto affecting this Contract, and that this Contract supersedes any and all prior negotiations, arrangements, representations, and understandings between the parties. No provision of this Contract may be amended except by an agreement in writing signed by City. This Contract, including exhibits and attachments attached hereto, signed by City and Contractor, constitutes the entire agreement between the parties.

This Contract shall be in full force and effect only when executed by the duly authorized City officials and the duly authorized agent of Contractor.

Contractor shall execute the Contract and all exhibits and attachments thereto, counterparts permitted, within ten calendar days after being given formal notice of award of the Contract.

Contractor's failure to execute this Contract and to file satisfactory contract bonds and insurance certificates as provided herein within ten (10) calendar days after being given formal notice of Contract award shall result in immediate cancellation of the award.

5.2. PLANS TO THE SUCCESSFUL BIDDER

The successful bidder may obtain 7 sets of plans and specifications for this project from the office of City Engineer, at no cost.

5.3. ISSUANCE OF THE NOTICE TO PROCEED

Notwithstanding unforeseeable circumstances, the Notice to Proceed shall be issued by City within 60 calendar days of contract award.

6. GENERAL TERMS AND CONDITIONS

6.1. LIQUIDATED DAMAGES

Unless otherwise specified, liquidated damages will be applied in accordance with MAG Specifications 108.9. Completion of the work as stated in this Contract is the same as completion of the work as stated in MAG Specifications 108.9. Damages will be applied at the amounts specified in MAG Specifications Table 108-1.

6.2. ESCROW AND HOLDBACK

In the event of a dispute arising under this Contract that is not summarily resolved by the parties concerning any withholding or nonpayment of funds by the City, the parties agree that said disputed funds may be held back and placed into a neutral escrow account, in the form of an interest-bearing savings account, until the dispute is resolved. By signing this Contract, Contractor acknowledges and agrees to the deposit of any and all disputed funds into an escrow account into the financial institution of the City's election.

Except as to those amounts withheld, at City's direction, the balance of the funds shall be paid to Contractor or subcontractor(s), as set forth by Arizona law. Any funds remitted to City in excess of the amount allowed by statute will be reimbursed to Contractor. In no event shall City be liable to Contractor for damages resulting from a claimed loss due to payment of the excess funds or due to a delay in reimbursing the excess payment.

Once per calendar month, the financial institution shall furnish the City and Contractor with a statement reflecting the funds held as of the last day of the preceding calendar month and showing the transactions for that prior month. At the request of Contractor or City, the financial institution shall furnish both parties with an interim statement showing funds held as of the 25th day of the most recent month or, if a non-business day, the following business day of that month.

Contractor acknowledges and agrees that all fees, costs, and charges imposed by any financial institution in connection with the maintenance and administration of the disputed funds shall be charged to, and paid by, Contractor. The funds shall be free of any claim for such fees, costs, or charges. However, the financial institution may obtain payment for any such accrued fees, costs, and charges owed by Contractor related to said funds out of available interest earned on the funds or deduct the same from any funds to be paid to Contractor, according to written disbursement instructions from City.

The parties acknowledge and agree that in the event of no resolution between the parties concerning distribution of the disputed funds, the funds may be interplead in a court of competent jurisdiction in Maricopa County, Arizona. It is understood that financial institution shall not be deemed liable, nor responsible, for the collectability of any funds assigned or held in connection with this provision.

6.3. TERMINATION

In addition to MAG Specifications 108.11, City, at its sole discretion, may terminate this Contract for convenience or abandon any portion of the project for which services have not been performed by Contractor, upon fourteen (14) calendar days' written notice delivered to Contractor personally or by certified mail.

Immediately after receiving such notice, Contractor shall discontinue advancing the services under this Contract and proceed to close said operations under this Contract. Contractor shall appraise the services it has completed and submit an appraisal to City for evaluation. City shall have the right to inspect and approve Contractor's work to appraise the services completed.

Contractor shall deliver to City all drawings, special provisions, field survey notes, reports, estimates, and any and all other documents or work product generated by Contractor under the Contract, entirely or partially completed, together with all unused materials supplied by City.

In the event of such termination or abandonment, Contractor shall be paid for services approved and accepted by City that Contractor performed prior to receipt of said notice of termination, including reimbursable expenses previously incurred.

If the remuneration scheduled hereunder is based upon a fixed fee or definitely ascertainable sum, the portion of such sum payable shall be proportionate to the

percentage of work completed, as reviewed and approved by City, based upon the scope of work. However, in no event shall the fee exceed the full cost of the Contract.

If City terminates or abandons the Contract, City shall make final payment within 60 calendar days after Contractor has delivered the last of the completed items and City has approved and determined the final fee.

In the event this Contract is terminated or abandoned prior to completion, City may complete the work, or enter into a Contract with another party for the remaining work.

In no event shall the City be obligated, liable, or responsible for performance of the obligations set forth herein, any provision of this Contract, or any expenses incurred by Contractor in securing this Contract (including, but not limited to, purchasing insurance coverage, performance bonds, or other security), at any time, including prior to or following City Council's approval of this Contract, should funds not be appropriated by the City through its Council or staff, in order to complete the Project. In the event that funds are not appropriated to meet or complete this Contract, then City shall immediately provide notice to Contractor of such non-allocation and terminate the Contract. City shall incur no resulting liabilities or penalties for termination under this Section.

This Contract may be terminated pursuant to A.R.S. § 38-511.

6.4. DEFAULT PROVISIONS

Contractor shall be deemed in default under this Contract upon the occurrence of any of the following events:

- 6.4.1.** Contractor provides material that does not meet the specifications of the Contract and fails to cure such non-performance within 14 calendar days after written notice from City;
- 6.4.2.** Contractor fails to adequately perform the services set forth in the plans and specifications of and fails to cure such non-performance within 14 calendar days after written notice from City;
- 6.4.3.** Contractor fails to complete the work required or furnish the materials required within the time stipulated in the Contract and fails to cure such non-performance within 14 calendar days after written notice from City;
- 6.4.4.** Contractor fails to make progress in the performance of the Contract and/or gives City reason to believe that Contractor will not or cannot perform the requirements of the Contract and fails to cure such non-performance within 14 calendar days after written notice from City;

6.4.5. Contractor fails to perform any other term or condition of this Contract and fails to cure such non-performance within 14 calendar days after written notice from City.

In the case of default, City may terminate the Contract, in whole or in part, and/or may resort to any other remedy as provided by law. City may also perform any test or analysis on materials for compliance with the specifications of the Contract. Contractor shall pay the actual expense of testing if the results of any test or analysis indicate a material to be non-compliant with the specifications.

6.5. WARRANTY

Contractor warrants to City that the construction, including all materials and equipment furnished as part of the construction, shall be new, unless otherwise specified in the Specifications and Contract; of good quality; in conformance with the Specifications; and free of defects in materials and workmanship. Contractor's warranty obligation excludes defects caused by abuse, alterations, or unreasonable failure to maintain the construction by persons other than Contractor, Subcontractors, or others under Contractor's control. Nothing in this warranty shall limit any manufacturer's warranty which provides City with greater warranty rights than set forth herein. Contractor will provide City with all manufacturers' warranties and operation and maintenance manuals upon substantial completion of the work. Contractor's warranty shall be for one (1) year and will commence for all portions of the work upon final acceptance of the entire work as determined by City under the Contract. All statutory or other warranties, express or implied, related to latent defects will remain in force and are not limited by this provision.

6.6. OWNERSHIP OF DOCUMENTS / INFRINGEMENT OF PATENT OR COPYRIGHT

All work products (electronically or manually generated) including, but not limited to, plans, specifications, cost estimates, tracings, studies, design analyses, original mylar drawings, computer aided drafting and design (CADD) file diskettes which reflect all final drawings, and other related products which are prepared in the performance of this Contract, are the property of City and are to be delivered to City before the final payment is made to Contractor. City shall retain ownership of these original drawings, however, if approved in writing by City, Contractor may retain the original drawings and supply City with reproducible copies. Contractor shall endorse by their professional seal all plans and special provisions furnished by them.

In the event these documents are used for another project without further consultation with Contractor, City agrees to indemnify and hold Contractor harmless from any claim arising from the reuse of the documents. City shall remove Contractor's seal and title block from such documents.

Contractor agrees to save, keep, hold harmless, and fully indemnify City, and any of its officers, officials, employees, and agents, from any and all damages, costs, or expenses, in law or equity, that may at any time arise out of any infringement of the patent right, copyright, or trademark of any person, persons, or entity in consequence of use by City, or by any of its officers, officials, employees, or agents, of materials supplied by Contractor, and of which Contractor is not a patentee or signee or lawfully entitled to sell the same.

Contractor agrees to indemnify and hold harmless City and its officers, officials, employees, and agents from any and all license, royalty, and proprietary fees or costs, including legal costs, which may arise out of City's purchase and use of goods supplied by Contractor.

It is expressly agreed by Contractor that these covenants are irrevocable and perpetual.

6.7. COMPLIANCE WITH STATE AND FEDERAL LAWS

6.7.1. Specially Designated Nationals and Blocked Persons List. Contractor represents and warrants to City that neither Contractor nor any affiliate or representative of Contractor (i) is listed on the Specially Designated Nationals and Blocked Persons List maintained by the Office of Foreign Asset Control, Department of the Treasury (OFAC) pursuant to Executive Order No. 13224, 66 Fed. Reg. 49079 ("Order"); (ii) is listed on any other list of terrorists or terrorist organizations maintained pursuant to the Order, the rules and regulations of OFAC or any other applicable requirements contained in any enabling legislation or other related Order(s); (iii) is engaged in activities prohibited in the Order; or (iv) has been convicted, pleaded *nolo contendere*, indicted, arraigned, or custodially detained on charges involving money laundering or predicate crimes to money laundering.

6.7.2. Employment Laws. Contractor agrees and covenants that it will comply with any and all applicable governmental restrictions, regulations, and rules of duly constituted authorities having jurisdiction insofar as the performance of the work and services pursuant to the Contract, and all applicable safety and employment laws, rules, and regulations, including, but not limited to, the Fair Labor Standards Act, the Walsh-Healey Act, and the Legal Arizona Workers Act (LAWA), and all amendments thereto, along with all attendant laws, rules, and regulations. Contractor acknowledges that a breach of this warranty is a material breach of this Contract, and that Contractor is subject to penalties for violation(s) of this provision, including termination of this Contract. City retains the right to inspect the documents of any and all contractors, subcontractors, and sub-subcontractors performing work and/or services relating to the Contract to

ensure compliance with this warranty. Any and all costs associated with City inspection are the sole responsibility of Contractor. Contractor hereby agrees to indemnify, defend, and hold City harmless for, from, and against all losses and liabilities arising from any and all violations thereof.

- 6.7.3. Equal Opportunity.** City is an equal opportunity, affirmative action employer. Contractor hereby covenants that it shall not discriminate unlawfully against any employee or applicant for employment, nor shall it deny the benefits of this Contract, to any person on the basis of race, color, creed, religion, ancestry, national origin, physical or mental disability, age, sex, gender, sexual orientation, gender identity, marital status, or veteran status, with regard to discharging obligations under this Contract. Contractor covenants and agrees that it will comply in all respects with the applicable provisions of Executive Order 11246, Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act, the Age Discrimination in Employment Act, the Vietnam Era Veterans' Readjustment Assistance Act, the Rehabilitation Act, and any other applicable state and federal statutes governing equal opportunity. Contractor agrees to post hereinafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting for the provisions of this clause.
- 6.7.4. Federal Employer Sanctions Law.** Contractor understands and acknowledges the applicability of the Federal Employment Eligibility Verification Requirements ("Requirements"), including, but not limited to, Executive Order 12989, Federal Acquisition Regulation E-Verify clause (73 F.R. 67704), and 8 U.S.C. § 1324, *et seq.*, as amended from time to time. Contractor warrants current compliance with these and all Federal immigration laws and regulations that relate to their employees, on behalf of the Contractor and all of its subcontractors, including the use of E-Verify to confirm the employment eligibility of all persons hired during a Contract term and current employees performing under the Contract within the United States. Should the Requirements conflict with any applicable state laws or regulations as referenced in 6.7.2., the Requirements shall prevail.
- 6.7.5. Boycott.** Contractor certifies that it is not currently engaged in and agrees for the duration of this Contract/Agreement that it will not engage in, a boycott of Israel, as that term is defined in A.R.S. § 35-393.
- 6.7.6. Compliance with Ariz. Rev. Stat. § 35-394.** Contractor hereby certifies that it does not currently, and agrees for the duration of this Agreement, that Contractor will not, use: 1. The forced labor of ethnic Uyghurs in the People's Republic of China; 2. Any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or 3. Any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the

People’s Republic of China. Contractor hereby agrees to indemnify and hold harmless the City, its officials, employees, and agents from any claims or causes of action relating to the City’s action based upon reliance upon this representation, including the payment of all costs and attorney fees incurred by the City in defending such as action.

Contractor further agrees to include the provisions of this section in any and all subcontracts hereunder. Any violation of such provisions shall constitute a material breach of this Contract.

6.7.7. Burial and Cultural Discoveries. Personnel working on projects involving ground-disturbing activity are required to comply with the Salt River Pima-Maricopa Indian Community (SRPMIC) Statement on Burials and Cultural Resource Discoveries (the “Statement”), a copy of which can be obtained from the City of Tempe Historical Preservation Office upon request at 480-350-8870. To comply with the Statement, Contractor and its’ agents are prohibited from publicly releasing information about archeological findings or recording (through photos, video, or other imaging) archaeological resources, including human remains, funerary objects, or other discoveries.

6.8. ANTIDISCRIMINATION

Contractor shall not refuse to hire or employ or bar or discharge from employment any person, or discriminate against such person in compensation, conditions, or privileges of employment because of race, color, gender, gender identity, sexual orientation, religion, national origin, familial status, age, disability, or United States military veteran status. Contractor shall provide a copy of its antidiscrimination policy to City to confirm compliance with this requirement or attest in writing to compliance based upon criteria outlined in (Exhibit 7.14).

6.9. JURISDICTION

This Contract will be deemed to be made under and will be construed in accordance with and governed by, the laws of the State of Arizona, without regard to the conflicts or choice of law provisions. An action to enforce any provision of this Contract or to obtain any remedy with respect hereto will be brought in the Superior Court of Arizona in and for Maricopa County, and for this purpose, each party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

6.10. DISPUTE RESOLUTION

The parties may mutually agree to submit any dispute arising under this Contract to binding arbitration, conducted by a sole arbitrator mutually agreed upon by the parties, to hear and render a decision to resolve said dispute. The arbitration shall

be held in Tempe, Arizona, subject to the laws of the State of Arizona. Each party shall bear its own costs and attorney's fees. A decision shall be made by the arbitrator within seven calendar days of the arbitration hearing.

6.11. SUCCESSORS AND ASSIGNS

This Contract shall not be assignable except at the written consent of City, and it shall extend to and be binding upon the heirs, executors, administrators, successors, and assigns of the parties hereto.

6.12. NON-WAIVER

The failure of either party to enforce any of the provisions of this Contract, or to require performance by the other party of any of the provisions of this Contract, will not be construed as a waiver of such provisions, nor will it affect the validity of this Contract or any part thereof or the right of either party to thereafter enforce each provision.

6.13. SURVIVAL

All warranties, representations, and indemnifications by Contractor will survive the completion or termination of this Contract.

6.14. SEVERABILITY

If any provision of this Contract or the application thereof to any person or circumstance is held invalid, illegal, or unenforceable to any extent, the remainder of this Contract and the application thereof will not be affected and will be enforceable to the fullest extent permitted by law.

6.15. INTEGRATION

This Contract contains the full agreement of the parties hereto. Any prior or contemporaneous written or oral agreement between the parties regarding the subject matter hereof is merged and superseded hereby.

6.16. TIME IS OF THE ESSENCE

Time of each of the terms, covenants, and conditions of this Contract is hereby expressly made of the essence.

6.17. THIRD PARTY BENEFICIARY

This Contract will not be construed to give any rights or benefits in the Contract to anyone other than City and Contractor. All duties and responsibilities undertaken

pursuant to this Contract will be for the sole and exclusive benefit of City and Contractor and not for the benefit of any other party.

6.18. CONFLICT OF INTEREST

Contractor agrees to disclose any financial or economic interest with the project property, or any property affected by the project, existing prior to the execution of this Contract. Further, Contractor agrees to disclose any financial or economic interest with the project property, or any property affected by the project, if Contractor gains such interest during the course of this Contract.

Contractor's gains of financial or economic interest in the project during the course of this Contract may be grounds for terminating this Contract. Any decision to terminate the Contract shall be at the sole discretion of City.

Contractor shall not engage the services, on this Contract, of any present or former City employee who was involved as a decision maker in the selection or approval processes, or who negotiated or approved billings or Contract modifications for this Contract.

6.19. COOPERATION AND FURTHER DOCUMENTATION

Contractor agrees to provide City such duly executed documents as may be reasonably requested by City to implement the intent of this Contract.

This Contract shall be in full force and effect only when it has been approved by the City Council of the City of Tempe, Arizona, and when executed by the duly authorized City officials and the duly authorized agent of Contractor.

6.20. UNAUTHORIZED FIREARMS & EXPLOSIVES

No person conducting business on City property shall carry a firearm or explosive of any type. This requirement shall also apply to persons who maintain a concealed weapons permit.

6.21. NOTICES TO CITY ENGINEER

All notices to the City relating to this Contract should be sent to the following individual, who is also the administrator of this Contract.

Sewer Line Project - McKellips Road; La Rosa Drive to Cavalier Drive
Mark A. Weber, P.E.
Deputy Public Works Director/
City Engineer
Public Works Department
Engineering Division

31 E. Fifth Street, Mail Stop 01-8
Tempe, Arizona 85281
480-350-8200

6.22. NOTICES TO CONTRACTOR

(To be completed by successful bidder)

Printed Name of Signatory

Company Name: _____

Address: _____

Phone: _____

Email: _____

6.23. GIS DATA DISCLAIMER

THE CITY OF TEMPE DOES NOT WARRANT THE ACCURACY, COMPLETENESS, CONDITION, SUITABILITY, PERFORMANCE, OR CURRENCY OF THE GIS DATA PROVIDED UNDER THIS CONTRACT. AREAS DEPICTED BY GIS DATA ARE APPROXIMATE, AND NOT GUARANTEED TO BE ACCURATE TO STANDARDS FOR MAPPING, SURVEYING, OR ENGINEERING. THIS DATA IS FOR ILLUSTRATIVE PURPOSES ONLY AND SHOULD NOT BE RELIED UPON FOR SITE-SPECIFIC PURPOSES. THE DATA HEREIN IS SUBJECT TO CONSTANT CHANGE AND MAY NOT BE COMPLETE, ACCURATE, OR UP-TO-DATE. THE CITY OF TEMPE IN NO WAY ASSUMES LIABILITY OR RESPONSIBILITY FOR ANY INCORRECT DATA OR ANY INFORMATION PROVIDED HEREIN. THE CONTRACTOR ACKNOWLEDGES AND AGREES THAT THE CITY OF TEMPE ASSUMES NO LIABILITY FOR DAMAGES INCURRED DIRECTLY OR INDIRECTLY RESULTING FROM INCOMPLETE, INCORRECT, OR MISSING INFORMATION; INCLUDING ANY DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED OR UNDER ANY THEORY OF LIABILITY, WHETHER IN TORT, CONTRACT, STRICT LIABILITY, OR OTHERWISE. BY WAY OF THE SIGNATURE ON THIS CONTRACT, THE CONTRACTOR ASSUMES ALL LIABILITY FOR ANY AND ALL DEPENDENCE AND/OR RELIANCE UPON THIS INFORMATION AND ASSUMES ALL

RESPONSIBILITY RELATING THERETO. ANY AND ALL EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PURPOSE ARE SPECIFICALLY AND EXPRESSLY DISCLAIMED. CONTRACTOR SHOULD NOT RELY UPON THE GIS DATA WITHOUT PROPER FIELD VERIFICATION FOR ANY PURPOSE.

6.24. AMENDMENT OF CONTRACT

No supplement, modification, or amendment of any term of this Contract will be deemed binding or effective unless in writing and signed by the parties hereto and in conformation with provisions of this Contract except as expressly provided herein to the contrary.

The Contract may not be changed, altered, or amended in any way except in writing signed by duly authorized representatives of CMAR and City. Contractor shall maintain a Certification by the Contractor Authorizing Employees to Sign Binding Agreements on file with the City. That Certification shall identify all individuals authorized by Contractor to execute documents necessary to carry out the terms of this Contract or to amend this Contract.

If the Contractor already has a Certification on file with the City, that Certification, along with any future amendments, is incorporated herein by reference. If the contractor does not already have a Certification on file with the City, it shall submit one with the City upon receipt of a Notice to Proceed, and that Certification, along with any future amendments, shall be incorporated herein by reference. In either case, Contractor agrees that the individuals listed on its most recent Certification by the Contractor Authorizing Employees to Sign Binding Agreements shall have authority to execute documents necessary to carry out the terms of the Contract or to amend this Contract.

6.25. LABOR

Contractor agrees and covenants to use only licensed contractors and subcontractor(s) in the making and/or installation of any and all repairs, alterations, improvements, or other work of Contractor on the Project. Contractor shall be liable to City for any losses and liabilities associated with any violation of this provision, and the Contract shall immediately be terminated upon any violation by Contractor.

6.26. NON-APPROPRIATION OF FUNDS OR NON-FUNDING

City is a government agency that relies upon appropriation of funds by its governing body to satisfy its obligations. In the event that (1) funds are not appropriated by the City Council to perform the Work; or (2) funds appropriated or otherwise allocated to perform the Work become unavailable for payment by City under this

Contract, City may either (a) cancel this Contract without further obligation of City; or (b) delay the Work for a period of six (6) months, In case of any such delay by City, Consultant/Contractor may suspend performance of work or services as applicable. The parties retain all rights available under this Contract to the extent permitted under Arizona law, in the event of termination or cancellation of this Contract due to lack of funding on the part of the City.

6.27. PUBLIC RECORDS

The City is a public entity subject to the provisions of the Arizona Public Records Law, A.R.S. § 39-121, *et seq.* (“Law”). Some or all of the information contained within the Contract and related documents constitutes a public record that the City may be required to disclose to other persons or entities. In the event of receipt of a public records request by the City, Contractor must provide verification that its document falls under the exception to the Law in order to contest disclosure of said document. In the event of Contractor contesting disclosure, said document shall be submitted to a court of competent jurisdiction for an *in-camera* review and determination, at Contractor’s sole expense.

6.28. COUNTERPARTS

This Contract may be executed in one or more counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument, and it shall not be necessary that any single counterpart bear the signature of all parties.

6.29. RECORD RETENTION

Contractor agrees to retain all records relating to the Contract pursuant to A.R.S. § 35-214, as amended from time to time. Contractor agrees to make those records available at all reasonable times for inspection and audit by City during the term of the Contract and for a period of five (5) years after the completion of the Contract. The records shall be provided at City Public Works Department, Engineering Division, Tempe, Arizona, or another location designated by City upon reasonable notice to Contractor.

6.30. DRUG-FREE WORKPLACE

The Contractor is hereby advised that the City has adopted a policy establishing a drug-free workplace for itself and as a requirement for sellers/Contractors doing business with the City to ensure the safety and health of employees working on City license agreements, contracts, and/or projects. The Contractor agrees to require a drug-free workplace for all employees working under this Contract. Specifically, all employees of the Contractor who are performing work under this Contract shall be notified, in writing, by the Contractor that they are prohibited from the manufacture, distribution, dispensation, possession, or unlawful use of a controlled

substance in the workplace or work site. Any violation of this section constitutes a material breach of this Contract.

7 EXHIBITS

The parties agree that all references to this Contract include all exhibits designated in and attached to this Contract, such exhibits being incorporated into and made an integral part of this Contract for all purposes.

- 7.1 BIDDER’S CHECK SHEET**
- 7.2 COMPETITIVE SEALED BID FORMS**
- 7.3 COMPETITIVE SEALED BID CERTIFICATION FORM**
- 7.4 BIDDER’S PROJECT REFERENCES**
- 7.5 ACKNOWLEDGEMENT REGARDING LETTER OF GOOD STANDING**
- 7.6 CERTIFICATION BY THE CONTRACTOR AUTHORIZING
EMPLOYEES TO SIGN BINDING AGREEMENTS**
- 7.7 PERFORMANCE BOND FORM**
- 7.8 PAYMENT BOND FORM**
- 7.9 CONDITIONAL WAIVER AND RELEASE FOR CONTRACTOR’S
PAYMENT AND SETTLEMENT OF CLAIMS**
- 7.10 AFFIDAVIT OF GENERAL CONTRACTOR / PRIME CONSULTANT
REGARDING HEALTH INSURANCE**
- 7.11 GUIDELINES FOR IMPLEMENTATION OF HEALTH INSURANCE**
- 7.12 PROMPT PAYMENT REQUIREMENTS**
- 7.13 AFFIDAVIT DEMONSTRATING LAWFUL PRESENCE IN THE UNITED
STATES**
- 7.14 COMPLIANCE WITH TEMPE CITY CODE ON
ANTIDISCRIMINATION**
- 7.15 CITY ENGINEERING SECURE FACILITIES ACCESS GUIDELINES**
- 7.16 LIST OF SUB-CONTRACTORS**

[SIGNATURE PAGE TO FOLLOW]

SIGNATURE PAGE

Sewer Line Project - McKellips Road; La Rosa Drive to Cavalier Drive Project No. 3221023E

DATED this 6th day of March 2025.

CITY OF TEMPE, ARIZONA

By: _____
Corey D. Woods, Mayor

By: _____
Public Works Director

ATTEST:

Recommended By:

Kara A. DeArrastia, City Clerk

Deputy Public Works Director/
City Engineer

APPROVED AS TO FORM:

Eric C. Anderson, City Attorney

Contractor warrants that the person who is signing this Contract on behalf of Contractor is authorized to do so and to execute all other documents necessary to carry out the terms of this Contract.

CONTRACTOR:

Signature

Printed Name

Title

Email Address

Federal I.D. No.

7.1.
BIDDER'S CHECK SHEET

This check sheet lists the items a bidder must include with its sealed bid.

	Included
10% Bid Guarantee (Section 4.3.)	<input type="checkbox"/>
EMOD and Loss Ratio Information (Section 4.6.2.)	<input type="checkbox"/>
Exhibit 7.2. Competitive Sealed Bid Forms (Confirm receipt of Addenda)	<input type="checkbox"/>
Exhibit 7.3. Competitive Sealed Bid Certification Form	<input type="checkbox"/>
Exhibit 7.4. Bidder's Project References	<input type="checkbox"/>
Exhibit 7.5. Acknowledgement regarding Letter of Good Standing	<input type="checkbox"/>
Exhibit 7.10. Bidder's Affidavit Regarding Health Insurance	<input type="checkbox"/>
Exhibit 7.13. Bidder's Affidavit Demonstrating Lawful Presence in the United States	<input type="checkbox"/>
Exhibit 7.16. List of Sub-contractors	<input type="checkbox"/>

NOTE: THE BIDDER IS SOLELY RESPONSIBLE FOR SUBMITTING WITH ITS BID ALL ITEMS REQUIRED BY THIS INVITATION FOR BID DOCUMENT. THIS CHECK SHEET IS PROVIDED SOLELY TO AID THE BIDDER IN PREPARING ITS BID SUBMITTAL AND SHALL NOT BE CONSTRUED AS IMPOSING RESPONSIBILITY ON THE PART OF THE CITY OF TEMPE.

7.2.

COMPETITIVE SEALED BID FORMS

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, _____, a corporation or limited liability corporation organized under the laws of the State of _____; a partnership consisting of _____; or an individual trading as _____, of the City of _____, and the County of _____, hereby proposes and agrees to furnish any and all plans, materials, labor, construction equipment, service, and transportation (all applicable taxes included) of the **SEWER LINE PROJECT-MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE, PROJECT NO. 3221023E**, and to install the material therein for City in a good and workmanlike and substantial manner and to the satisfaction of City or its properly authorized agents and strictly pursuant to and in conformity with the Contract and other documents that may be made by City or their properly authorized agents, as provided herein, at the following prices submitted through the City's PMWeb Software System.

The undersigned hereby declares that Contractor has visited the site and has carefully examined the Contract related to the work covered by the bid submitted through the City's PMWeb Software System.

The undersigned understands that, when it is in the best interests of the City of Tempe, the City may cancel this solicitation, or may reject any and all bids in whole or in part, or may waive any informalities in the bids received.

Contractor's performance shall not start until after receiving the Notice to Proceed, and the work will be completed within 140 consecutive calendar days after the Notice to Proceed date.

The undersigned hereby acknowledges receipt of the following Addenda: _____

_____ and Contractor's bid has been adjusted to reflect any changes.

Respectfully submitted,

By: _____
Signature

Printed Name

Its: _____
Title

Contractor's License No.

Federal I.D. No.

For: _____
Company Name

Address: _____

Phone: _____

Email Address: _____

7.3.

**COMPETITIVE SEALED BID
CERTIFICATION FORM**

**Sewer Line Project - McKellips Road; La Rosa Drive to Cavalier Drive
Project No. 3221023E**

Bidder certifies that it is a: _____ proprietorship; _____ partnership; _____ corporation; _____ other.

Arizona Sales Tax No. _____

Use Tax No. for Out-of-State Supplier _____

Taxpayer's Federal Identification No. _____

Bidder certifies that it has read, understands, and will fully and faithfully comply with this Invitation for Bids, its attachments, and any referenced documents. Bidder also certifies that the bid was independently developed without consultation with any other Bidders or potential Bidders.

Company's Legal Name: _____

Address: _____

City, State and Zip Code: _____

Telephone Number: _____

Company's Fax Number: _____

Company's Toll-Free Number: _____

Signature: _____

Printed Name and Title: _____

E-Mail Address: _____

MAILING ADDRESSES

Purchase Order Address: (If different from above)

Name: _____

Address: _____

City, State and Zip Code: _____

Payment Address: (If different from above)

Name: _____

Address: _____

City, State and Zip Code: _____



7.5.

ACKNOWLEDGEMENT REGARDING LETTER IN GOOD STANDING

**SEWER LINE PROJECT - MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE
PROJECT NO. 3221023E**

Signing this document acknowledges contractor's understanding of the requirements outlined in the Invitation for Bid, Section 4.7 stating the following:

4.7 PRE-CONTRACT AWARD REQUIREMENTS

4.7.1 Contractor shall provide a copy of its written health and safety program and any required employee training records or certificates.

4.7.2 Taxes. All applicable taxes due and owing by Contractor and all subcontractors shall be considered by City in determining award. At all times, the determination of applicable taxes and rates, and remitting taxes owed, shall be the sole responsibility of Contractor.

It is the sole responsibility of the Contractor and any subcontractors to obtain a Letter of Good Standing from the Arizona Department of Revenue prior to Contract award. Go to <https://azdor.gov/forms/collections-forms/tax-clearance-application> and obtain directions regarding how to submit for the Letter of Good Standing. Submit a copy of the Letter of Good Standing to contractor_support@tempe.gov. The Letter of Good Standing must have been issued within the last 90 days from the award date of the contract. Contractor must complete (Exhibit 7.5).

In the event a "denial" letter is received from the Arizona Department of Revenue, should any taxes owed by Contractor, or any subcontractors not be remitted in full prior to Contract award along with the receipt of a Letter of Good Standing from Contractor and each subcontractor, the bid shall be considered non-responsive and rejected by the City.

I hereby acknowledge _____ (contractor/vendor) will be in compliance with section 4.7 at the time of a contract award.

Signature

Date: _____

Print Name

Title

Company

7.6.

**CERTIFICATION BY THE CONTRACTOR AUTHORIZING
EMPLOYEES TO SIGN BINDING AGREEMENTS**

**Sewer Line Project - McKellips Road; La Rosa Drive to Cavalier Drive
Project No. 3221023E**

Contractor hereby certifies that the following employees in its organization are duly authorized to sign binding agreements necessary to carry out the terms of its contract(s) or amend the terms of its contract(s) on behalf of the Contractor, its owner(s), partner(s), and/or principal(s) of a corporation, or the manager(s) and/or member(s) of a limited liability company. Such agreements include, but are not limited to, pay requests, change orders, required certifications, etc.

In submitting this Certification, Contractor acknowledges this Certification is incorporated by reference into any active contract(s) between Contractor and the City and will be incorporated by reference into any future contract(s) between Contractor and the City. Contractor further acknowledges it understands the City will rely on the representations contained herein concerning authority to execute documents.

Type or Print Name

Signature

Contractor Name

Signed By

(Owner, Partner, or Principal of the Corporation)

Printed Name

Title

Date

7.7.

PERFORMANCE BOND FORM
(Bond Amount to Be Equal to 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 6th day of March 2025, to complete Project No. 3221023E, 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 Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the Contract during the original term of the Contract and any extension of the Contract, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise, it remains in full force and effect.

7.8.

PAYMENT BOND FORM

(Bond Amount to Be Equal to 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 6th day of March 2025, to complete Project No. 322103E, 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 Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in the Contract, this obligation is void. Otherwise it remains in full force and effect.

Provided, however, that this bond is executed pursuant to the provisions of title 34, chapter 2, article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of title 34, chapter 2, article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as a part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

DATED this _____ day of _____ 2025.

PRINCIPAL

SEAL

By: _____

*SURETY

SEAL

By: _____

AGENCY ADDRESS

*Surety hereby acknowledges it holds a certificate of authority to transact surety business in the State of Arizona, issued by the director of the department of insurance pursuant to Title 20, Chapter 2, Article 1, Arizona Revised Statutes.

7.9.

**CITY OF TEMPE DEPARTMENT OF PUBLIC WORKS
CONDITIONAL WAIVER AND RELEASE
FOR CONTRACTOR'S FINAL PAYMENT
AND SETTLEMENT OF CLAIMS**

The undersigned:

Contractor's Name: _____

Contractor's Address: _____

On receipt by the undersigned of a check from City of Tempe in the sum of \$ _____ (dollar amount for final payment) and when the check has been properly endorsed and has been paid by the bank on which it is drawn, this document becomes effective to release any mechanic's lien, any state or federal statutory bond right, any private bond right, any claim for payment and any rights under any similar ordinance, rule or statute related to claim or payment rights for persons in the undersigned's position, the undersigned has on the job of the City of Tempe (Owner) for **SEWER LINE PROJECT - MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE** and **PROJECT NO. 3221023E** at the location of McKellips Road; La Rosa Drive to Cavalier Drive. This release covers the final payment to the undersigned for all labor, services, equipment or materials furnished to the jobsite, except for disputed claims in the amount of \$ _____. Before any recipient of this document relies on it, the person should verify evidence of payment to the undersigned.

The undersigned, in consideration of the payment acknowledged, hereby warrants that he has already paid or will pay using the monies received from this final payment to promptly pay in full all his contractors, subcontractors, laborers, materialmen and suppliers for all work, materials, equipment or services provided to the above-referenced project.

Contractor Signature

Date

By (Print Name and Title)

7.10.

**AFFIDAVIT OF GENERAL CONTRACTOR / PRIME CONSULTANT
REGARDING
HEALTH INSURANCE**

_____, Arizona

Date _____

**SEWER LINE PROJECT -
MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE
PROJECT NO. 3221023E**

I hereby certify that _____ (name of company) currently has, and all of its major subcontractors/subconsultants, defined as doing work in excess of \$30,000, will have, during the course of this Contract, health insurance for all employees working on this project and will offer health insurance coverage to eligible dependents of such employees, as defined in the accompanying Guidelines. The company's health insurance is as follows:

Name of Insurance Company: _____

Type of Insurance (PPO, HMO, POS, INDEMNITY): _____

Policy No.: _____

Policy Effective Date (MM/DD/YY): _____

Policy Expiration Date (MM/DD/YY): _____

Signed and dated at _____, this _____ day of _____ 2025.

General Contractor/Prime Consultant

By: _____

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

SUBSCRIBED AND SWORN to before me this _____ day of _____ 2025.

Notary Public

[Notary Seal]

**CITY OF TEMPE GUIDELINES
FOR IMPLEMENTATION OF HEALTH INSURANCE**

These Guidelines are provided for purposes of implementing Resolution No. 2000.73, which requires all employees of prime consultants, general contractors and major subconsultants and subcontractors to have health insurance and to offer health insurance to their eligible dependents, as determined at the start of each project. Questions regarding these guidelines should be directed to the City of Tempe Engineering Division at 480-350-8200.

1. All Prime Consultants who enter into a Public Works contract or General Contractors who bid on Public Works projects that are advertised for bid and enter into a contract in excess of \$30,000 with the City of Tempe ("City") after January 1, 2001, are required to sign an affidavit in the form attached hereto. The prime consultant or general contractor shall require that all major subconsultants or subcontractors, defined as entities doing work in excess of \$30,000, comply with the health insurance requirements. In signing the affidavit, prime consultants and general contractors may refer to and rely upon these Guidelines for interpretation.
2. Health insurance is required for permanent employees who work for the consultant/contractor more than 120 days in any calendar year. A "workday" consists of any time within a 24-hour period, regardless of number of hours, that the individual is paid. This requirement excludes students working part-time who are enrolled in a recognized educational institution. Many companies have a grace period or a qualifying period prior to commencement of insurance coverage, which is acceptable so long as the employee coverage begins by the 120th day of Contract signing. Temporary employees will be covered to the same extent as City covers temporary employees as determined at the start of each project.
3. If a contractor is a "Union" shop and withholds union dues from employees for health insurance coverage that is also offered to their eligible dependents and meets all City requirements, Contractor may so note on the required affidavit.
4. The health insurance requirements herein apply to all employees that are directly involved with City project including support and administrative personnel.
5. Health insurance coverage must be maintained during the entire time of the Contract, including any warranty periods, with the City.
6. All complaints concerning violations of the health insurance requirements shall be filed by an employee, in writing, with the Public Works Department, within 30 calendar days from discovery of the violation. An administrative hearing will be held before the Public Works Director, and a written decision of findings will be provided to the parties to the hearing within 14 calendar days thereafter. Appeal from the decision of the Public Works Director may be made within 14 calendar days of the date of the decision by filing a notice.
7. In the event of a finding by City of a violation of the insurance provisions, the company in violation of the provision shall be barred from bidding on, or entering into, any Public Works Contract with City for a minimum period of three years.
8. All consultants and contractors subject to the health insurance requirements shall post, in English and Spanish, notice of the health insurance requirements at their office and at the job site. Signs for posting will be provided by the City.

These "Guidelines for Implementation of Health Insurance" issued and dated this 21st day of August 2002, hereby amend all guidelines previously issued.

PROMPT PAYMENT REQUIREMENTS

City adheres to the prompt payment provisions of A.R.S. § 34-221.

1. Contractor shall pay to its sub-contractors or material suppliers and each Sub-contractor shall pay to its Sub-contractors or material supplier, within seven calendar days of receipt of each progress payment, the amounts attributable to the Contractor, Sub-contractors or material supplier for work performed or materials supplied. In addition, any reduction of retainage to Contractor must also result in a like reduction to sub-contractors for their work successfully completed within 14 calendar days of the reduction of the retainage to the Contractor. No contract between Contractor and its Contractors, Sub-contractors and material suppliers may materially alter the rights of any Contractor, Sub-Contractor or material supplier to receive prompt and timely payment as provided herein. Any diversion by Contractor, or any Sub-contractor, of payments received for work performed on a contract, or failure to reasonably account for the application or use of such payments, constitutes sufficient grounds for City to take any one or more of the following actions: (1) withhold future payments including retainage until proper disbursement has been made; (2) refusal of all future bids or offers from Contractor for a period not to exceed one year; or, 3) cancellation of the contract.
2. Alternate Dispute Resolution. If entitlement to the payment is in dispute, the parties to the dispute shall submit the matter to either; a) binding arbitration; b) to some other form of binding alternative dispute resolution (ADR); or, c) a City of Tempe facilitated mediation process. The ADR process shall commence within a reasonable period of time, not to exceed 14 calendar days of receipt of a Notice to Proceed to an ADR process issued by City once an ADR determination has been made on any disputed claim, the determination shall be implemented by the disputing parties within 7 calendar days of that determination.

AFFIDAVIT DEMONSTRATING LAWFUL PRESENCE IN THE UNITED STATES

A.R.S. § 1-501 and § 1-502 require any individual person or sole proprietor who applies to the City for a local public benefit (including the award of a contract) to demonstrate his or her lawful presence in the United States. An individual person or sole proprietor who submits a bid for this contract must complete this Affidavit and submit it with the bid, along with a copy of one of the documents listed below.

ALL VIOLATIONS OF FEDERAL IMMIGRATION LAW SHALL BE REPORTED TO 1-866-347-2423

LAWFUL PRESENCE IN THE UNITED STATES CAN BE DEMONSTRATED BY PRESENTATION OF ONE (1) OF THE DOCUMENTS LISTED BELOW.

Please present the document indicated below to the City. If mailing the document, attach a copy of the document to this Affidavit. (If the document may not be copied, present the document in person to the City for review and signing of the affidavit.)

- _____ 1. An Arizona driver license issued after 1996.
Print first 4 numbers/letters from license: _____
- _____ 2. An Arizona non-operating identification License.
Print first 4 numbers/letters: _____
- _____ 3. A birth certificate or delayed birth certificate issued in any state, territory or possession of the United States.
Year of birth: _____: Place of birth: _____
- _____ 4. A United States Certificate of Birth abroad.
Year of birth: _____: Place of birth: _____
- _____ 5. A United States passport.
Print first 4 numbers/letters on Passport: _____
- _____ 6. A foreign passport with a United States Visa.
Print first 4 numbers/letters on Passport _____
Print first 4 numbers/letters on Visa _____
- _____ 7. An I-94 form with a photograph.
Print first 4 numbers on I-94: _____
- _____ 8. **A United States Citizenship and Immigration Services Employment Authorization Document (EAD).**
Print first 4 numbers/letters on EAD: _____
- _____ 9. **Refugee travel document.**
Date of Issuance: _____ Refugee Country: _____
- _____ 10. **A United States Certificate of Naturalization.**
Print first 4 digits of CIS Reg. No.: _____
- _____ 11. **A United States Certificate of Citizenship.**
Date of Issuance: _____ Place of Issuance: _____
- _____ 12. **A tribal Certificate of Indian Blood.**
Date of Issuance: _____ Name of Tribe: _____
- _____ 13. **A tribal or Bureau of Indian Affairs Affidavit of Birth.**
Year of Birth: _____ Place of Birth: _____

I DO SWEAR OR AFFIRM UNDER PENALTY OF LAW THAT I AM LAWFULLY PRESENT IN THE UNITED STATES AND THAT THE DOCUMENT I PRESENTED ABOVE AS VERIFICATION IS TRUE.

Signature

Business/Company (if applicable)

Print Name

Address

Date: _____

City, State, Zip Code

STATE OF ARIZONA
COUNTY OF MARICOPA

SUBSCRIBED AND SWORN to before me this _____ day of _____ 2025.

[Notary Seal]

Notary Public _____



7.14.

**COMPLIANCE WITH TEMPE CITY CODE
CHAPTER 2 ARTICLE VIII SECTION 2-603(5)**

Per Tempe City Code Chapter 2 Article VIII Section 2-603(5), it is unlawful for a City vendor or City contractor, because of race, color, gender, gender identity, sexual orientation, religion, national origin, familial status, age, disability, or United States military veteran status, to refuse to hire or employ or bar or discharge from employment any person, or to discriminate against such person in compensation, conditions, or privileges of employment.

City vendors and contractors of fifteen (15) or more employees shall provide a copy of its antidiscrimination policy to the city's procurement officer to confirm compliance with this article. Employers having fourteen (14) or less employees may attest to compliance with this article.

- CONTRACTOR means any person who has a contract with the City.
- VENDOR means a person or firm in the business of selling or otherwise providing products, materials, or services.

CONTRACTOR/VENDOR, select one:

_____ Current copy of antidiscrimination policy attached.

OR

_____ I hereby certify _____ (contractor/vendor) to be in compliance with Tempe City Code Chapter 2 Article VIII Section 2-603(5).

Signature

Date: _____

Print Name

Title

Company

CITY ENGINEERING SECURE FACILITIES ACCESS GUIDELINES

These guidelines are applicable to all contracts that call for work to be done in any of the City's secure facilities and are incorporated by reference into said contracts. Contractors should be advised that there are separate requirements for General Secure Facilities and Water Utilities Department Secure Facilities.

I. GENERAL SECURE FACILITIES ACCESS REQUIREMENTS

The Contractor and Third-Party Construction Manager shall provide the City with a 10-year background check for all employees, including subcontractors, working in any of the City's secure facilities which include, but are not limited to, the Tempe Transportation Center, East Valley Bus Operations and Maintenance Facility, Police Department/Courts Headquarters, and Police Department substations. Background checks shall be performed by an authorized company capable of conducting a nationwide search. Background checks shall include, at a minimum, information regarding state and national criminal and sexual offender information, and a 5-year driving record search. The Contractor and Third-Party Construction Manager shall be responsible for the cost of all their employee background checks. Below is a list of automatic and discretionary disqualifiers which may disqualify or make an individual ineligible to work at any of the City's secure facilities. The Contractor and Third-Party Construction Manager shall submit all employee background checks to the City of Tempe for review and authorization before the contractor employees or subcontractors are issued a Contractor Identification Badge and before being allowed to work at any of the City's secure facilities. All authorized contractor, subcontractor and third-party construction manager employees shall coordinate with the respective facility supervisor to obtain a contractor identification badge. Contractor and Third-Party Construction Manager employees must wear their contractor identification badge at-all-times while working at the City's secure facility.

AUTOMATIC DISQUALIFIERS

The following will disqualify any individual who has, at any time:

- Has known affiliations with gangs, gang members, terrorist groups and/or individuals,
- Outstanding felony warrants,
- Conviction for selling, producing, cultivating, or transporting marijuana for sale,
- Conviction for producing, cultivating, or transporting any dangerous drugs or narcotics for sale.

DISCRETIONARY DISQUALIFIERS

The following may, upon review by the Tempe Police Department, make an individual ineligible to work in or around secure areas of City Facilities:

- Unlawful sexual misconduct;
- DUI conviction or suspension of your Arizona driver's license due to a DUI;
- Commission of a felony;
- Conviction of a felony or any offense that would be a felony if committed in Arizona;
- Outstanding misdemeanor warrants;
- Any other conduct or offense that could jeopardize the safety of City employees or the public; or,
- Insufficient information.

II. WATER UTILITIES DEPARTMENT SECURE FACILITIES ACCESS REQUIREMENTS

The Contractor and Third-Party Construction Manager shall verify that a 10-year background check has been completed within the last 5 years for all employees, including subcontractors, working in any of the City's Water Utilities Department secure facilities which include, but are not limited to, the Johnny G. Martinez Water Treatment Plant, South Tempe Water Treatment Plant, and Kyrene Water Reclamation Facility. The background check shall include state and national criminal and sexual offender information as well as driving record information outlined in Secure Facility Access Requirements. Background checks shall be performed by an authorized company capable of conducting a nationwide search. Background checks shall include, at a minimum, information regarding state and national criminal and sexual offender information, and a 5-year driving record search. The Contractor and Third-Party Construction Manager shall be responsible for the cost of all their employee background checks.

Contractor and Third-Party Construction Manager shall disclose any knowledge of employee criminal history status involving the following:

- Any felony offense;
- Any offense involving assault or threats of violence;
- Any theft, fraud or financial crimes offense;
- Any arson offense;
- Any sexual misconduct offense;
- Any offense of misconduct involving a deadly weapon;

SECURE FACILITY VERIFICATION REQUIREMENTS

The Contractor and Third-Party Construction Manager shall verify that all employee background checks have been completed before the contractor employees or subcontractors are issued a Contractor Identification Badge and before being allowed to work at any of the City's Water Utilities Department secure facilities. All authorized contractor, subcontractor and third-party construction manager employees shall coordinate with the respective facility supervisor to obtain a contractor identification badge. Contractor and Third-Party Construction Manager employees must wear their contractor identification badge at-all-times while working at the City's secure facility.

LIST OF SUB-CONTRACTORS

**PROJECT NO. 3221023E
SEWER LINE PROJECT –
MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER DRIVE**

MAG Specification 102.6 requires listing of all subcontractors with the bid for all subcontract work. Only one name shall be listed for each category. BIDDER proposes to subcontract certain portions of the work to the firms listed below:

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Name _____
Location _____
ROC No./Exp. _____
ROC Classification _____
Federal ID No./Exp. _____
Type of Work _____
Amount \$ _____

Signature of Bidder



EXHIBIT A
TECHNICAL SPECIFICATIONS

FOR

City of Tempe

**SEWER LINE PROJECT-MCKELLIPS ROAD; LA ROSA DRIVE TO CAVALIER
DRIVE**

Project No. 3221023E

TEMPE, ARIZONA

December 2024

Mayor

Cory D. Woods

Vice Mayor

Doreen Garlid

City Council

Jennifer Adams

Nikki Amberg

Arlene Chin

Randy Keating

Berdetta Hodge

City Manager

Rosa Inchausti

Dibble Project No. 1024018.01



3020 East Camelback Road, Suite 201
Phoenix, AZ 85016
T. 602.957.1155
F. 602.957.2838
www.dibblecorp.com

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APPENDICES

- APPENDIX A – MCESD CERTIFICATE OF APPROVAL TO CONSTRUCT
- APPENDIX B – UTILITY POTHOLING REPORT
- APPENDIX C – GEOTECHNICAL REPORT

DOCUMENTS PROVIDED IN ATTACHED APPENDICES ARE FOR REFERENCE ONLY AND NOT PROFESSIONALLY SEALED BY AUTHOR.

SECTION 100 GENERAL CONDITIONS

The "Uniform Standard Specifications for Public Works Construction" which are sponsored and distributed by the Maricopa Association of Governments (MAG), and which are hereinafter referred to as the "MAG Standard Specifications," are hereby adopted as part of these contract documents. Copies of these documents, with the latest revisions, may be obtained at the Maricopa Association of Governments, 302 North 1st Avenue, Phoenix AZ 85003.

SECTION 101 ABBREVIATIONS AND DEFINITIONS

Add the following subsections to the MAG Standard Specifications:

101.2 Definitions and Terms

City: City of Tempe, Arizona
Contracting Agency: City of Tempe, Arizona
Consulting Engineer: Dibble
3020 East Camelback Road, Suite 201, Phoenix, AZ 85016
Construction Manager: TBD

SECTION 104 SCOPE OF WORK

Add the following subsections to the MAG Standard Specifications:

104.1 Work to be Done

The project is generally described as follows: installation of new sewer along McKellips Road from La Rosa Drive to the east to Cavalier Drive to the west. The new sewer will connect to existing sanitary sewer manholes both upstream and downstream of project area.

Major elements of the project include construction and installation of the following: sewer pipe, manholes, concrete encasement, sidewalk, valley gutter, and surface restoration.

104.1.1 General

The work shall be as described in the specifications, as shown on the project plans, and in compliance with permit requirements.

The work shall conform to the City's Public Works and Engineering Standards and Details, and MAG Standard Specifications, latest edition. Any section or any sub-section of any Standard Specification included within these Contract Documents by reference only is understood to be made part of these Contract Documents. The Contractor shall have at least one copy of all referenced standard specifications and details at the job site at all times.

Standard Drawings and the manuals referenced in the project contract documents shall be required for construction of this project, insofar as applicable for any work to be performed within the public right-of-way and within the City jurisdictional limits.

- City of Tempe Supplement to the MAG Uniform Standard Details and Specifications for Public Works Construction
- MAG Standard Specifications and Details
- City of Tempe Traffic Barricade Manual, latest edition
- Manual on Uniform Traffic Control Devices (MUTCD), Millennium Edition, latest version

All work mentioned or indicated within the Contract Documents shall be performed by the contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such construction is to be excluded or modified.

SECTION 105 CONTROL OF WORK

Add the following subsections to the MAG Standard Specifications:

105.2 Plans and Shop Drawings

Remove the following paragraphs:

“If the submittal is acceptable, one (1) copy with each page stamped “Furnish as Submitted” will be returned to the Contractor. The Contractor shall submit additional copies (as required) to the Engineer.

If the Engineer determines that the submittal requires corrections or is to be rejected, one (1) copy stamped “Furnish as Noted” or “Revise and Resubmit” will be returned to the Contractor. The Contractor will submit five (5) corrected or new copies.

The copy stamped “Furnish as Submitted,” returned to the Contractor, will become a part of the contract documents and will be kept at the job site. Any work done prior to the receipt of this review will be at the Contractor’s risk and expense.”

Add the following paragraphs:

If the submittal is acceptable, one (1) copy will be stamped “No Exceptions Taken” and will be returned to the Contractor.

If the submittal is acceptable with minor corrections, one (1) copy will be stamped “Make Corrections Noted” and will be returned to Contractor. Contractor shall make the noted corrections, but a shop drawing resubmittal is not required.

If the submittal requires corrections, one (1) copy will be stamped “Amend & Resubmit” and will be returned to the Contractor. If the submittal is stamped “Amend & Resubmit” the Contractor shall submit a corrected or new copy electronically.

If the submittal is rejected, one (1) copy will be stamped “Rejected” and will be returned to the Contractor. The Contractor shall resubmit a corrected or new copy electronically.

The copy stamped “No Exceptions Taken,” returned to the Contractor, will become a part of the contract documents and will be kept at the job site. Any work done prior to the receipt of this review will be at the Contractor’s risk and expense.

Electronic submittals shall be in PDF format only.

105.6 Cooperation with Utilities

The Contractor shall notify all affected utility companies and Arizona 811 (602-263-1100 or 811) prior to the start of construction and shall ascertain the locations of the various underground utilities either shown on the Design Drawings and/or as may be brought to their attention by the utility companies. The location of underground utilities shall be determined by "potholing" by the Contractor prior to any trenching or excavation operations.

The existing utilities expected to be encountered and their owners are listed below. This list is for guidelines and may not be all inclusive.

Lumen (formerly CenturyLink) – USIC Dispatch Center	(800) 778-9140
Cox Communications – USIC Dispatch Center	(800) 778-9140
Southwest Gas – ELM Locating Dispatch	(623) 780-3350
Southwest Emergency Number	(602) 271-4277
SRP Electric – SRP Blue Stake	(602) 236-8026
City of Tempe Utilities.....	(480) 350-4311

Section 105.8 Construction Stakes, Lines and Grades

Section 105.8 of the MAG Standard Specifications is replaced with the following:

The Contractor shall furnish all materials, personnel, and equipment necessary to perform all surveying, staking, laying out of control lines and verifications of the accuracy of all existing control points which are delineated in the design drawings and contract documents. The work shall be done under the direction of a Registered Land Surveyor licensed to practice in the State of Arizona.

Staking Outline: Prior to beginning any survey operations, the Contractor shall furnish to the City of Tempe Project Manager, for approval, a written outline detailing the method of staking, interval of stakes, marking of stakes, grade control for various courses of materials, referencing, structure control, and any other procedures and controls necessary for survey completion. A part of this outline shall also be a schedule which will show the sequencing of the survey and layout work, throughout the course of the contract, listing a percentage of completion for each month.

Field Books: The Contractor shall furnish field books to be used for recording survey data and field notes. These books shall be available for inspection by the City at any time and shall become the property of the City upon completion of the work.

Survey Control Verification:

The Contractor shall protect in place the Project Benchmark, described on the cover sheet:

CITY OF TEMPE ALUMINUM CAP FLUSH AT THE INTERSECTION OF COLLEGE AVENUE AND MCKELLIPS ROAD
OBSERVED GROUND NORTHING: 291749.66
OBSERVED GROUND EASTING: 294636.22
PUBLISHED ELEVATION: 1226.56

The Contractor shall be responsible to stake construction elevations tied to the bench mark.

- (A) Control Points (horizontal and vertical) – The existence and location of all survey monuments, bench marks and control points shall be verified prior to demolition or construction activity. Immediately notify the City of Tempe Project Manager when location discrepancies greater than two-hundredths (0.02) foot horizontal or one-hundredth (0.01) foot vertical are found. All datum shall be the City of Tempe Vertical Network.
- (B) Control Lines – Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., shall be established and referenced prior to construction.

Construction Stakes: The Contractor shall set construction stakes and marks establishing lines and grades for utilities and necessary appurtenances and other work as indicated in the design drawings and contract documents and shall be responsible for their conformance with the plans and specifications.

The stakes shall be established in accordance with the following guidelines which represent the minimum standard and the Contractor shall provide additional stakes and controls necessary to perform the work. The Contractor shall be held responsible for the preservation of all stakes and marks and will replace, at no additional cost to the City, any construction stakes or marks which have been carelessly or willfully destroyed by any party.

Inspection and Acceptance of Work: The City reserves the right to make inspections and random checks of any portion of the staking and layout work. If, in the City's opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, the City will order any or all of the staking and layout work redone at no additional cost to the City.

As-Builts: A full size set of project Design Drawings shall be kept on-site and updated on a weekly basis with a red pencil or red ink to reflect any field adjustments, changes, omissions, additions, etc. as they occur on the project. The PM/CM will check site as-builts on a weekly basis to insure all modified project elements have been properly recorded on the field plan set.

The Contractor shall prepare as-builts using the project Design Drawings. Information shall be shown on these design drawings in red opaque ink, depicting the constructed dimensions, elevations, grades and materials including locations of existing underground utilities found during construction. The City and Engineer will be the sole judge in determining whether the as-builts are acceptable.

All work included in the contract documents as well as changes to the contract shall be noted as correct or modified by either checking off the information if it is correct, or by drawing a neat line through the original data and writing in the correct information in red opaque ink if the information is incorrect. Unless noted otherwise below in the minimum as-built requirement section, station/offset measurements will be from construction centerline/monument line both parallel and transverse to roadway; added items or location changes shall be physically drawn at revised or new locations on the as-builts; and all measurements and stations should be to the nearest tenth of a foot.

The minimum requirements for as-built acceptance are as follows:

- (1) Project Drawing Quantity Notations: Any project drawing or quantity summary sheet that shows a quantity on it that is incorrect shall be corrected by drawing a neat line through the original quantity and writing in the correct information. When space on the drawing does not allow room to indicate the corrections, a separate table may be drawn on a separate sheet with reference on both plan sheets to the plan sheet that the table refers to or to the sheet where the table is located.
- (2) Existing/New Utilities: All underground infrastructure utilities, whether depicted on the project plans or not, shall be verified, corrected or added to the as-builts noting the beginning and ending station/offset location and elevation of utility relative to finished roadway grade or other identifiable ground or permanent roadway/project feature. Any electrical installation work for street lighting or power connection shall be located relative to construction centerline/monument line or relative to back of curb and gutter (whichever is closer) including the depth of the facility.
- (3) Removals: Dimensions and/or other volumetric descriptions and station/offset location of all removed items.
- (4) Pipelines: When pipeline parallels the construction centerline/monument line, verify or correct the perpendicular distance between the two. When pipeline angles relative to the construction

centerline/monument line or is in a curved roadway section, as-built measured straight pipe run distances, angle points, changes in size, fitting/tee locations tied-in with practical known construction centerline/monument line location or other easily verifiable permanent point. Distances between fittings are from fitting centerline. All project drawing pipeline cross sections and profiles are to be corrected to reflect modified pipeline locations/alignments. Station and offset locations for sewer line laterals are from main line to ROW line with beginning/ending line location tied to a monument or to a property corner. Locations where waterlines cross curb and gutter are to be noted by station. Where waterlines run parallel to curb and gutter, note locations relative to back of curb or construction centerline/monument line (whichever is closer) including angle points and elevation.

The as-built drawings shall be certified by a Registered Land Surveyor licensed to practice in the State of Arizona. As-built drawings shall be delivered to the City of Tempe Contract Administrator within thirty (30) calendar days from the date of final inspection and acceptance by the City of the work completed under this contract. Work under this bid item includes transfer of all information noted by the Contractor on the on-site as-built drawing set described above under Bid Item number 1. Final payment will be made only after submitted as-builts are accepted by the City (see "Measurement and Payment" below).

Measurement and Payment: Construction surveying will be measured as a single complete item of work and paid at the lump sum price indicated on the Schedule of Bid Items, which amount shall be considered full compensation for the work as described herein and required to provide all necessary survey stakes and control. The approved schedule showing the sequencing and percentage of the survey and layout work shall be the basis on which monthly progress payments shall be made. This schedule shall be subject to periodic review, at the request of either party, if the survey and layout work lags or accelerates. If necessary, the schedule will be revised to reflect changes in survey and layout progress. When approved, the revised schedule will become the basis for payment.

Final payment for survey work under this bid item will be made when the City accepts the final as-built. Should the Contractor fail to submit acceptable as-builts within the maximum 30 calendar day period noted above, the City will execute a deductive change order for 1% of the Construction Survey bid item total from the contract (or \$5,500.00, whichever is greater) for every 5 working day period that the contractor fails to provide acceptable as-builts (not including City review time). If the Contractor fails to submit acceptable as-builts after the 3rd submittal, the City will deduct 5% from the Construction Survey As-Built bid item total from the contract (or \$10,000.00, whichever is greater) and execute a final change order noting the City's justification for penalizing the contractor for unacceptable as-built preparation.

ITEM 001

CONSTRUCTION SURVEY, LAYOUT, & AS-BUILT

LUMP SUM

SECTION 106 CONTROL OF MATERIALS

Add the following subsections to the MAG Standard Specifications:

106.2 SAMPLES AND TESTS OF MATERIALS:

The Contractor shall provide material testing and frequency as stated by MAG Specifications. The Contractor shall obtain an independent laboratory or testing company and pay all costs required by the Contract Documents. A copy of all test results shall be furnished to the City's Construction Manager in a Weekly Summary Report submitted at the weekly construction progress meeting (time and date to be set upon contract award) for tests performed from the preceding week. Before final completion, the Contractor shall submit a final testing report containing all testing results which certifies the work complies with the Contract Documents. This testing report shall be sealed by a Professional Civil Engineer, registered in the state of Arizona who was responsible for overseeing the testing and sampling for said company. Payment for material testing shall be considered incidental to the cost of this project.

The City's Construction Manager will provide Quality Assurance testing to supplement the Contractor's above testing requirements. The Contractor shall provide access and coordination to facilitate the testing required by the Construction Manager's testing lab.

SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

Add the following subsections to the MAG Standard Specifications:

107.2.1 PERMITS

AZPDES:

Contractor shall be responsible for the preparation and implementation of an Arizona Department of Environmental Quality (ADEQ) Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit Notice of Intent (NOI), Notice of Termination (NOT) and Stormwater Pollution Prevention Program (SWPPP) along with the preparation and submittal of all supporting applications and documentation.

Contractor shall be responsible for implementing, installing, maintaining, and removing equipment and facilities specified in the SWPPP. This includes, but not limited to the preparation, installation, maintenance, and removal of temporary SWPPP elements, assuring proper operation of the pollution control devices installed, and all maintenance, cleaning, and disposal costs associated with the cleanup and repair following storm events, runoff or releases on the project.

City of Tempe Right-Of-Way Use Permit:

Contractor shall be responsible for the preparation and submittal of all supporting applications, documentation, and fees necessary for obtaining permits and bonding for construction within City of Tempe rights-of-way.

107.2.1.1 Payment:

Payment for AZPDES, and City of Tempe (COT) permits, as completed herein, shall be made incidental to the cost of pipe installation. No separate payment will be made for this work.

SECTION 109 MEASUREMENTS AND PAYMENTS

Add the following subsections to the MAG Standard Specifications:

109.11 Mobilization and Demobilization:

The City of Tempe will compensate the Contractor for one-time, round trip mobilization to begin work and upon completion of the work demobilization of Contractor's personnel, equipment, supplies and incidentals, establishment of offices, buildings and other facilities required for the performance of the work on the project, existing utility coordination and "potholing", as well as preparatory work and operations prior to the commencement of the work on the project site.

109.11.1 Payment:

Payment for mobilization and demobilization, measured as provided above, will be made at the contract lump sum price. Payment shall be made in equal one-third portions. The first payment will be paid with Contractor's initial billing. The second payment will be made when the total payments to Contractor for the bid items, exclusive of payments for mobilization/demobilization, equals one-half of the total bid by Contractor, exclusive of mobilization and demobilization. The remaining one-third will be paid as part of the final payment due Contractor.

When other contract items are adjusted as provided in Section 109, and if the costs applicable to such items of work include mobilization costs, such mobilization costs will be considered as recovered by Contractor in the lump sum price paid for mobilization and will be excluded from consideration in determining compensation under Section 109.

ITEM 002 **MOBILIZATION/DEMobilIZATION** **LUMP SUM**

PART 300 – STREETS AND RELATED WORK

SECTION 336 PAVEMENT MATCHING AND SURFACE REPLACEMENT

Add the following subsections to the MAG Standard Specifications:

336.5 **Payment**

Payment for AC pavement replacement will be made at the unit bid price per square yard. Such payment shall constitute full compensation for providing equipment and accomplishing this work complete in place as shown on the construction plans. Striping shall be replaced in kind and shall be considered incidental to pavement replacement.

ITEM 003 **AC PAVEMENT REPLACEMENT (COT STANDARD DETAIL T-450)** **SQUARE YARD**

No separate payment will be made for typical trench backfill of unpaved ground per the City of Tempe Standard Detail T-450. This work will be made and shall be considered incidental to Section 610 WATER LINE CONSTRUCTION.

SECTION 350 REMOVAL OF EXISTING IMPROVEMENTS

Add the following subsections to the MAG Standard Specifications:

350.1 **Description**

This work shall consist of removal, disposal, replacement of various existing improvements, such as structures, curbs and gutters, sidewalks, riprap, and other items necessary for the accomplishment of the improvements.

Where the items are identified to be salvaged, the Contractor shall deliver the item to a location to be determined by the City. The location for salvaged item delivery shall not be located more than 4 miles from the project site.

350.4 **Payment**

Payment for removal and replacement of curbs, gutters, sidewalks, and brick manholes includes all labor, equipment, and materials required and shall constitute full compensation for accomplishing all work associated with the removal and replacement of curbs, gutters, sidewalks, brick manhole, concrete manhole, and connecting new sewer to existing manhole base as described in the special provisions and on the design drawings.

ITEM 004 **REMOVE & REPLACE VERTICAL CURB & GUTTER (MAG STD DET 220, TYPE A)** **LINEAR FOOT**
ITEM 005 **REMOVE & REPLACE SIDEWALK (MAG STD DET 222, TYPE B)** **SQUARE FOOT**
ITEM 006 **REMOVE & REPLACE 48-INCH DIAMETER BRICK MANHOLE** **EACH**
ITEM 007 **REPLACE LANDSCAPING IN KIND** **LUMP SUM**

PART 400 – TRAFFIC CONTROL, RIGHT-OF-WAY DEVELOPMENT AND INCIDENTALS

SECTION 401 TRAFFIC CONTROL

Add the following subsections to the MAG Standard Specifications:

401.5 General Traffic Regulations

Contractor shall submit traffic control plans to the City of Tempe for approval prior to the start of work in accordance with the City of Tempe Traffic Barricade Manual and City of Phoenix Traffic Barricade Manual. Contractor shall maintain traffic flow along McKellips Road at all times with a minimum of one lane open for each direction.

Off duty officers are required per the City of Tempe approved traffic control plans where excavation occurs within 500-feet of a signalized intersection.

401.6 Measurement

Traffic control devices shall be measured according to Contractor supplied invoices for devices provided. Trench plating and road restriping shall not be considered part of traffic control devices, but as incidental to the project.

401.7 Payment

Traffic control devices shall be paid per approved invoice amounts provided by Contractor. The amount allocated for this ALLOWANCE is **\$65,000.00**

ITEM 008 TRAFFIC CONTROL ALLOWANCE

PART 600 – WATER, SEWER, STORM DRAIN AND IRRIGATION

SECTION 615 SANITARY SEWER LINE CONSTRUCTION

Add the following subsection to the MAG Standard Specifications

615.2 Materials

Section 615.2 of the MAG Standard Specifications is replaced with the following:

Sanitary sewer pipe used for sewer line construction including specials, joints, and gaskets shall be extra strength Vitrified Clay Pipe (VCP) in accordance with MAG specification Section 743.

Sanitary sewer pipe shall be installed and tested per MAG Specification sections 615 & 611. In addition to required testing per MAG Specification sections 615 & 611 and prior to surface restoration, the Contractor shall clean and conduct Closed Circuit T.V. (CCTV) Inspection utilizing digital 360 degree view CCTV video equipment to document built conditions. Any defects in the pipe or construction methods found shall be corrected by the Contractor at no additional cost to the City.

615.16 Measurement and Payment

Payment for installation of sanitary sewer pipe will be made at the contract unit price per linear foot, and shall constitute full compensation for furnishing all material, labor, tools and equipment, protecting and/or replacing traffic signal loops and other utilities, and accomplishing all work associated with obtaining and installing the new sewer pipe as described in the special provisions and on the design drawings. The work includes, but is not limited

to trench excavation, bedding, and backfill.

Payment for cleaning and conducting CCTV inspection will be made at the contract unit price per linear foot, and shall constitute full compensation for furnishing all material, labor, tools and equipment, and accomplishing all work associated with completing cleaning and CCTV inspection.

Payment for installation of concrete encasement will be made at the contract unit price per linear foot, and shall constitute full compensation for furnishing all material, labor, tools and equipment, protecting and/or replacing existing utilities and accomplishing all work associated with obtaining and installing the concrete encasement as described in the special provisions and on the design drawings. The work includes, but is not limited to trench excavation, bedding, and backfill.

<i>ITEM 009</i>	<i>8-INCH VCP SANITARY SEWER PIPE</i>	<i>LINEAR FOOT</i>
<i>ITEM 010</i>	<i>CLEANING AND CCTV INSPECTION</i>	<i>LINEAR FOOT</i>
<i>ITEM 011</i>	<i>CONCRETE ENCASEMENT MAG STD DET 404-3</i>	<i>LINEAR FOOT</i>

PART 625 – MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS

625.5 Payment

Payment for installation of sanitary sewer access manholes will be made at the each contract unit price, and shall constitute full compensation for furnishing all material, labor, tools, and equipment, accomplishing all work associated with obtaining and installing the new sanitary sewer access manholes, and testing per MAG Specification Section 611.5. The work includes, but is not limited to excavation, proper disposal of excavated material, and bedding.

<i>ITEM 012</i>	<i>60-INCH DIAMETER CONCRETE MANHOLE</i>	<i>EACH</i>
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APPENDIX A

MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT – CERTIFICATE OF APPROVAL TO CONSTRUCT (1 PAGE)



Approval Date: 11/15/2024

MCESD Project No. WWR2400620
SYSTEM: City of Tempe

**CERTIFICATE OF APPROVAL TO CONSTRUCT
(WITH STIPULATIONS)
and
PROVISIONAL VERIFICATION OF GENERAL PERMIT CONFORMANCE
SEWAGE DISPOSAL SYSTEM EXTENSION**

PROJECT DESCRIPTION: Sewer Line Project - McKellips Road; La Rosa Drive to Cavalier Drive - sanitary sewer collection system of approximately 821 linear feet of 8" with a point of connection to the City of Tempe sewer system.

LOCATION: City of Tempe, Maricopa County
Section 10, T1N, R4E
E McKellips Road


PROJECT OWNER: City of Tempe
31 E Fifth Street
Tempe, AZ 85281

Pursuant to Arizona Administrative Code (AAC) Title 18: Chapter 9, Article 3 and the Maricopa County Environmental Health Code: Chapters II.

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 stipulations: 1. In addition to obtaining a permit from Maricopa County Environmental Services Department, it may be necessary to obtain a permit from your local municipality or Maricopa County Planning and Development Department – if the property is in the unincorporated County. Please contact these entities for additional information.

2. Operation of this sewer collection system project shall not begin until an Approval of Construction and Verification of General Permit Conformance is issued by the Maricopa County Environmental Services Department. AOC will require confirmation that wastewater treatment plant capacity and conveyance line capacity are available to service the flows projected and described by this application at the time AOC is sought by the applicant and before AOC will be granted by the County.

WATER AND WASTE MANAGEMENT DIVISION

By 
Subdivision Infrastructure & Planning Program

From the approval date noted above this certificate will EXPIRE, if construction has not substantially started within one year or if no Approval OF Construction has been received within two years showing verification of completion.

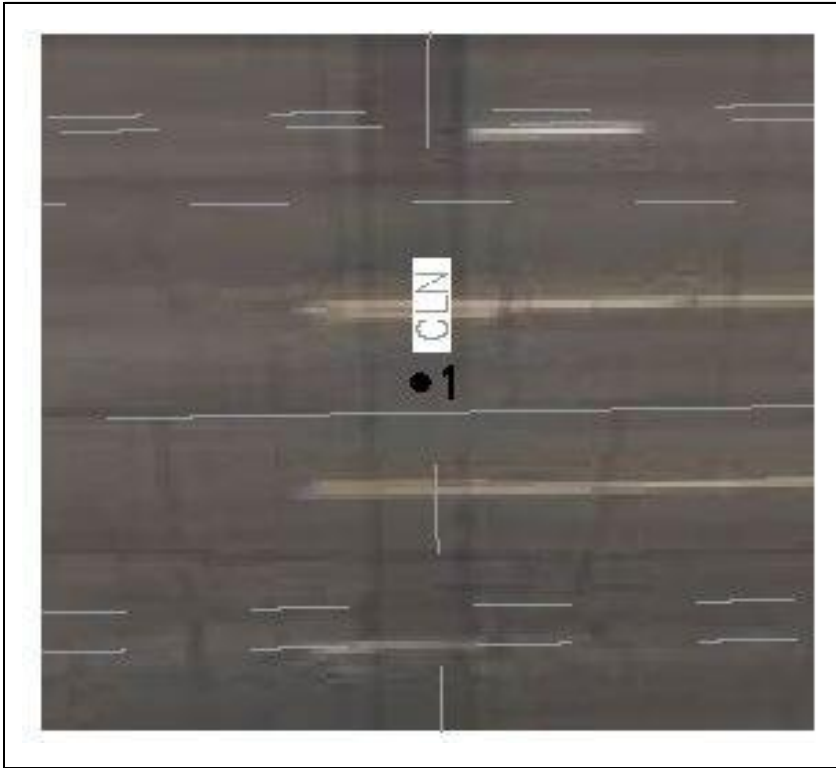
APPENDIX B

UTILITY POTHOLING REPORT (10 PAGES)

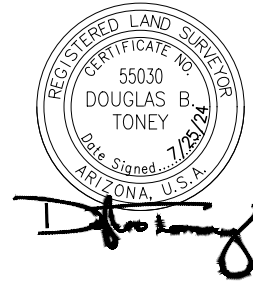
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>1</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & La Rosa Dr</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p>PROJECT BM - BRASS CAP IN HANDHOLE @ COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)</p>	<p>FACING <u>North</u></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">SURFACE ELEVATION</td> <td style="padding: 5px;"><u>1221.5</u></td> <td style="padding: 5px;">← 12" x 12" x 45" →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">TOP ELEVATION</td> <td style="padding: 5px;"><u>1218.0</u></td> <td style="padding: 5px;">O.D. (INCHES)</td> <td style="padding: 5px;"><u>3</u></td> </tr> <tr> <td style="padding: 5px;">BOTTOM ELEVATION</td> <td style="padding: 5px;"><u>1217.8</u></td> <td style="padding: 5px; text-align: center;">○</td> <td style="padding: 5px;"></td> </tr> </table> <p style="text-align: right;">3.5 TOP DEPTH (FEET)</p> <p style="text-align: right;">3.8 BOTTOM (FEET)</p>	SURFACE ELEVATION	<u>1221.5</u>	← 12" x 12" x 45" →		TOP ELEVATION	<u>1218.0</u>	O.D. (INCHES)	<u>3</u>	BOTTOM ELEVATION	<u>1217.8</u>	○	
SURFACE ELEVATION	<u>1221.5</u>	← 12" x 12" x 45" →											
TOP ELEVATION	<u>1218.0</u>	O.D. (INCHES)	<u>3</u>										
BOTTOM ELEVATION	<u>1217.8</u>	○											
RIBBON COLOR <u>Orange</u>													
COORDINATES: NORTHING <u>291765.36</u>	EASTING <u>295345.50</u>												
STATIONING: STATION <u>0+00.00</u>	OFFSET <u>0</u>												
PAVING THICKNESS (INCHES) <u>5</u>	PAVING TYPE <u>Asphalt</u>												
SIZE (INCHES) <u>3</u> (MATERIAL) <u>HDPE</u>	SOIL CONDITION <u>Good Soil</u>												
FACILITY OWNER <u>Century Link Fiber Optic</u>													

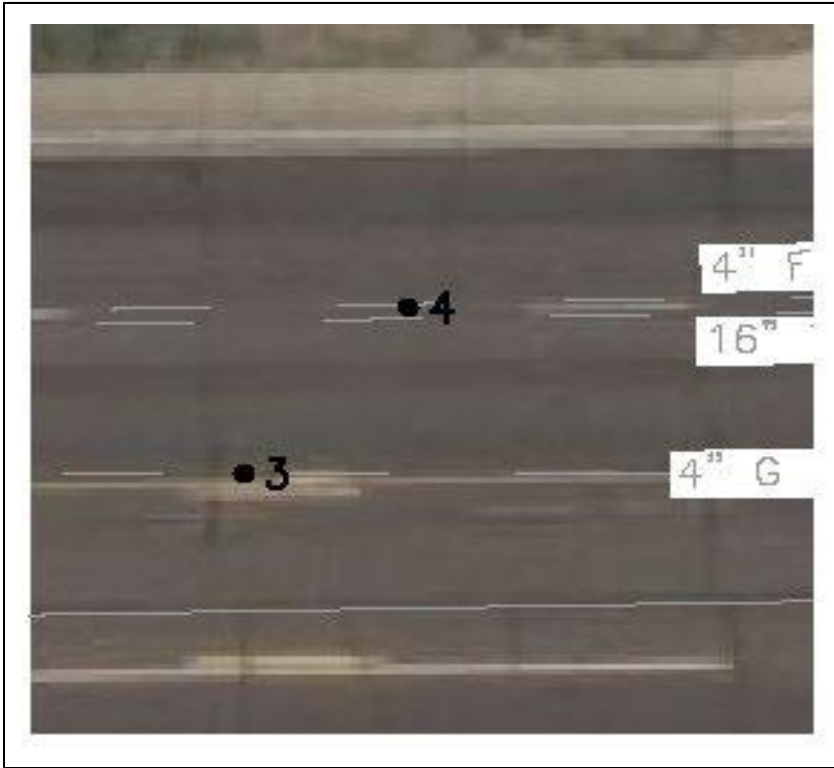
COMMENTS:

(1) 3" HDPE Century Link Fiber Optic @ 42" Top of Pipe

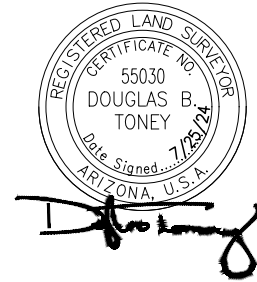
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>4</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & Van Ness Ave</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																								
<p>PROJECT BM - BRASS CAP IN HANDHOLE COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)</p> <p style="text-align: right;">@</p>	<p>FACING <u>East</u></p> <table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">SURFACE ELEVATION</td> <td style="padding: 2px;"><u>1216.4</u></td> <td style="padding: 2px;">← 12" x 12" x 45"</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">O.D. (INCHES)</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">17.4</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">○</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">TOP ELEVATION</td> <td style="padding: 2px;"><u>1210.8</u></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">5.6 TOP DEPTH (FEET)</td> </tr> <tr> <td style="padding: 2px;">BOTTOM ELEVATION</td> <td style="padding: 2px;"><u>1209.3</u></td> <td style="padding: 2px;"></td> <td style="padding: 2px;">7.1 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>1216.4</u>	← 12" x 12" x 45"				O.D. (INCHES)				17.4				○		TOP ELEVATION	<u>1210.8</u>		5.6 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>1209.3</u>		7.1 BOTTOM (FEET)
SURFACE ELEVATION	<u>1216.4</u>	← 12" x 12" x 45"																							
		O.D. (INCHES)																							
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		○																							
TOP ELEVATION	<u>1210.8</u>		5.6 TOP DEPTH (FEET)																						
BOTTOM ELEVATION	<u>1209.3</u>		7.1 BOTTOM (FEET)																						
RIBBON COLOR <u>Blue</u>																									
COORDINATES: NORTHING <u>291789.53</u>	EASTING <u>295647.00</u>																								
STATIONING: STATION <u>0+00.00</u>	OFFSET <u>0</u>																								
PAVING THICKNESS (INCHES) <u>5</u>	PAVING TYPE <u>Asphalt</u>																								
SOIL CONDITION <u>Good Soil</u>																									
SIZE (INCHES) <u>16</u> (MATERIAL) <u>D.I.P.</u>	FACILITY OWNER <u>City of Tempe Water</u>																								

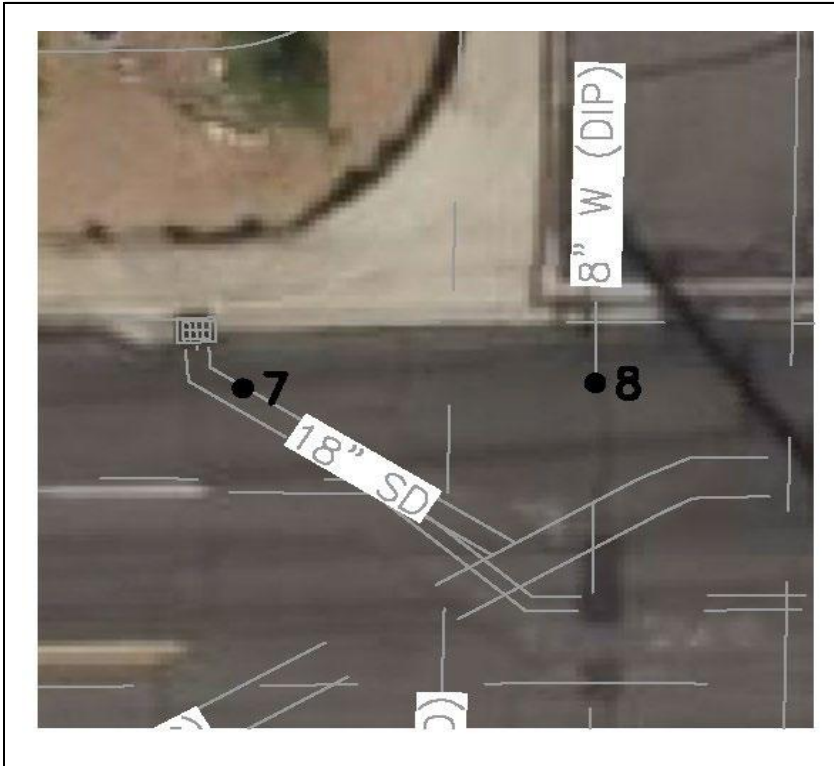
COMMENTS:

(1) 16" (17.4" O.D.) Ductile Iron City of Tempe Water Line @ 67.5" Top of Pipe.

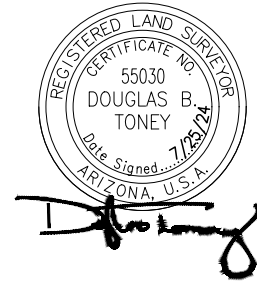
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>7</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & McAllister Ave</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
PROJECT BM - BRASS CAP IN HANDHOLE COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)	FACING <u>Northwest</u> SURFACE ELEVATION <u>1213.9</u> TOP ELEVATION <u>1212.7</u> BOTTOM ELEVATION <u>1210.9</u>
RIBBON COLOR <u>Green</u>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 10px;"> \leftarrow 12" x 12" x 45" O.D. (INCHES) 21 </div> <div style="text-align: center;"> </div> <div style="text-align: center; margin-left: 10px;"> 1.2 TOP DEPTH (FEET) 2.9 BOTTOM (FEET) </div> </div>

COORDINATES: NORTHING	<u>291801.12</u>	EASTING	<u>295936.44</u>
STATIONING: STATION	<u>0+00.00</u>	OFFSET	<u>0</u>
PAVING THICKNESS (INCHES)	<u>5</u>	PAVING TYPE	<u>Asphalt</u>
SOIL CONDITION	<u>Good Soil</u>		
SIZE (INCHES)	<u>18</u>	(MATERIAL)	<u>Concrete</u>
FACILITY OWNER	<u>City of Tempe Storm Drain</u>		

COMMENTS:

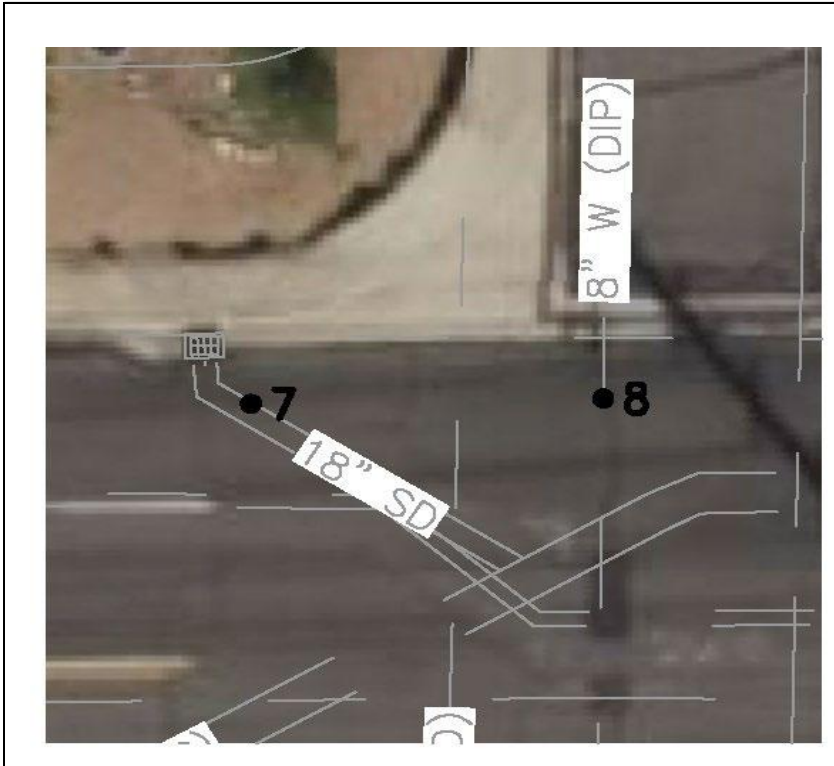
(1) 18" (21" O.D.) Concrete City of Tempe Storm Drain @ 14" Top of Pipe.

PREPARED BY: TL CHECKED BY: DT

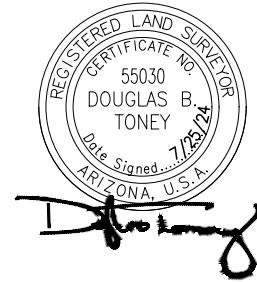
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>8</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & McAllister Ave</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
PROJECT BM - BRASS CAP IN HANDHOLE COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)	FACING <u>North</u> SURFACE ELEVATION <u>1213.7</u> TOP ELEVATION <u>1209.1</u> BOTTOM ELEVATION <u>1208.4</u>
RIBBON COLOR <u>Blue</u>	12" x 12" x 45" O.D. (INCHES) 9.05 TOP DEPTH (FEET) <u>4.6</u> BOTTOM (FEET) <u>5.3</u>

COORDINATES: NORTHING	<u>291801.51</u>	EASTING	<u>295958.43</u>
STATIONING: STATION	<u>0+00.00</u>	OFFSET	<u>0</u>
PAVING THICKNESS (INCHES)	<u>5</u>	PAVING TYPE	<u>Asphalt</u>
SOIL CONDITION	<u>Good Soil</u>		
SIZE (INCHES)	<u>8</u>	(MATERIAL)	<u>D.I.P.</u>
FACILITY OWNER	<u>City of Tempe Water</u>		

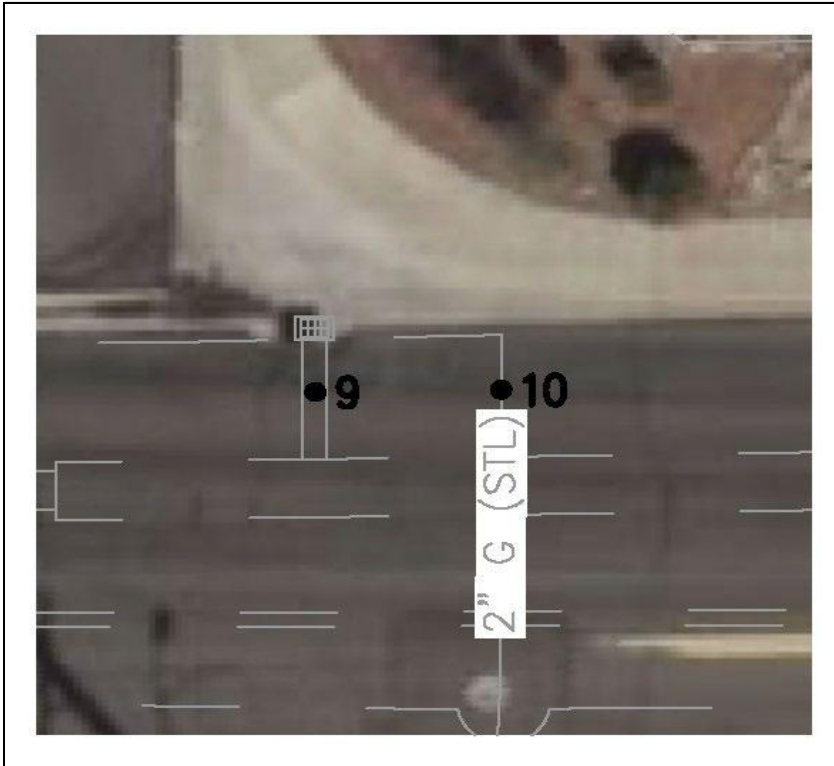
COMMENTS:

(1) 8" (9.05" O.D.) Ductile Iron City of Tempe Water Line @ 55" Top of Pipe. This point is at a 45° elbow and represents the bottom flange of the elbow. The pipe is getting deeper as it heads to the south from this point at a 45° angle.

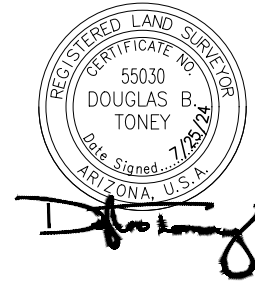
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>9</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & McAllister Ave</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
PROJECT BM - BRASS CAP IN HANDHOLE COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)	FACING <u>North</u> SURFACE ELEVATION <u>1213.4</u> TOP ELEVATION <u>1211.5</u> BOTTOM ELEVATION <u>1209.7</u>
RIBBON COLOR <u>Green</u>	@ <u>12" x 12" x 45"</u> O.D. (INCHES) <u>21</u> TOP DEPTH (FEET) <u>1.9</u> BOTTOM (FEET) <u>3.7</u>

COORDINATES: NORTHING	<u>291802.08</u>	EASTING	<u>295998.15</u>
STATIONING: STATION	<u>0+00.00</u>	OFFSET	<u>0</u>
PAVING THICKNESS (INCHES)	<u>5</u>	PAVING TYPE	<u>Asphalt</u>
SOIL CONDITION	<u>Good Soil</u>		
SIZE (INCHES)	<u>18</u>	(MATERIAL)	<u>Concrete</u>
FACILITY OWNER	<u>City of Tempe Storm Drain</u>		

COMMENTS:

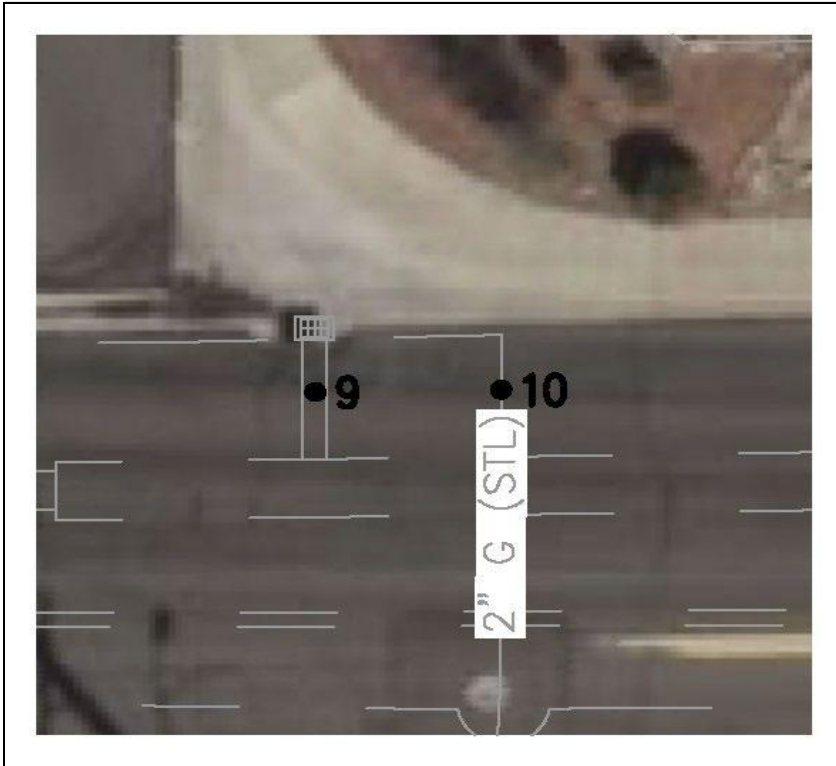
(1) 18" (21" O.D.) Concrete City of Tempe Storm Drain @ 23" Top of Pipe.

PREPARED BY: TL CHECKED BY: DT

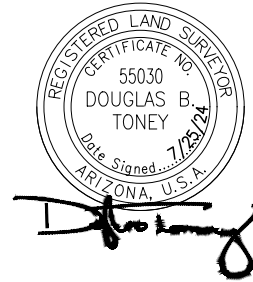
SUE LOCATION REPORT - QUALITY LEVEL A

Test Hole #	<u>10</u>	SUE Crew	<u>GRACO</u>
Date Dug	<u>7/23/2024</u>	Truck #	<u> </u>
Project #	<u>N/A</u>	City	<u>Tempe</u>
Project Name	<u>Mckellips Sewer Potholes</u>	County	<u>Maricopa</u>
Location	<u>McKellips Rd & McAllister Ave</u>		

LOCATION PLAN - NOT TO SCALE



See attached associated picture file for corresponding field photos.



SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
PROJECT BM - BRASS CAP IN HANDHOLE COLLEGE AVE & MCKELLIPS RD ELEVATION: 1226.56' (NAVD 88)	FACING <u>North</u> SURFACE ELEVATION <u>1213.3</u> TOP ELEVATION <u>1210.7</u> BOTTOM ELEVATION <u>1210.5</u>
RIBBON COLOR <u>Yellow</u>	12" x 12" x 45" O.D. (INCHES) <u>2</u> TOP DEPTH (FEET) <u>2.6</u> BOTTOM (FEET) <u>2.8</u>

COORDINATES: NORTHING	<u>291802.27</u>	EASTING	<u>296009.78</u>
STATIONING: STATION	<u>0+00.00</u>	OFFSET	<u>0</u>
PAVING THICKNESS (INCHES)	<u>5</u>	PAVING TYPE	<u>Asphalt</u>
SOIL CONDITION	<u>Good Soil</u>		
SIZE (INCHES)	<u>2</u>	(MATERIAL)	<u>Steel</u>
FACILITY OWNER	<u>Southwest Gas</u>		

COMMENTS:

(1) 2" Steel SWG Gas at 31.5" Top of Pipe

PREPARED BY: TL CHECKED BY: DT

APPENDIX C

GEOTECHNICAL REPORT (41 PAGES)

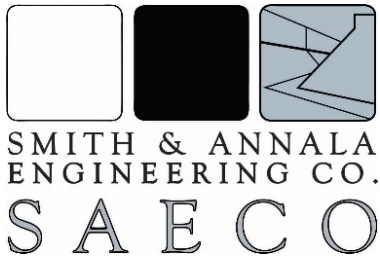
GEOTECHNICAL STUDY
McKellips Sewer Alignment
La Rosa Drive & McKellips Drive
Tempe, Arizona

PREPARED FOR:

Dibble
3020 East Camelback Road,
Suite 201
Phoenix, Arizona 85016

PREPARED BY:

Smith & Annala Engineering Co.
5861 South Kyrene Road,
Suite 5
Tempe, Arizona 85283
(480) 659-4101

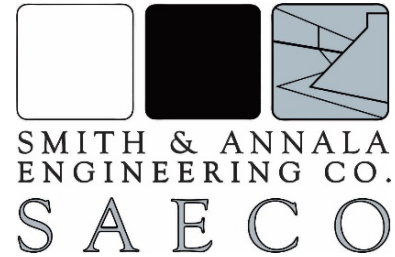


August 10, 2024
SAECO Project No. 44.24.2328

August 10, 2024

Attention: Alaric Fradenburg

Dibble
3020 East Camelback Road
Suite 201
Phoenix, Arizona 85016
Phone: (970) 423-9701
Email: alaric.fradenburg@dibblecorp.com



Subject: Geotechnical Engineering Study
McKellips Sewer Alignment
La Rosa Drive & McKellips Drive
Tempe, Arizona
SAECO Project No. 44.24.2328

We are pleased to submit this report of our geotechnical study for the project. This study was performed in general accordance with our proposal PG29.24.008, Revision 2, dated February 26, 2024, and your authorization. The report's goal is to provide geotechnical engineering recommendations for project design and construction. The recommendations provided are based on subsurface explorations, laboratory testing, academic publications, and our judgement based on experience with similar projects and similar subsurface conditions.

From a geotechnical standpoint and provided the recommendations contained in the report are followed, we believe the site is suitable for the proposed construction. A summary of our findings and a summary of the recommendations we have provided in the full report are outlined below.

Significant conditions encountered from our investigation at the site include:

- Near surface materials generally consist of clayey sand with gravel.
- Field penetration testing indicates soils are dense to very dense throughout the depths explored.
- Relative shallow refusal was encountered at the east side of the alignment at 11.9 feet below current grade due to oversized gravel and cobbles.
- Testing on remolded samples indicates the near surface soils have low expansion potential.
- Based on our laboratory testing, the on-site soils appear to have low contents of soluble sulfate and should have negligible effect on concrete.

The following summary of the recommendations in our report are based on the findings from our field investigation:

- Bedding and foundations (manholes, vaults, etc.) generally may bear on relatively undisturbed dense native soils.
- On-site soils generally appear suitable for re-use as trench backfill material, however some screening or selective use may be necessary.
- Given the dense to very dense nature of the site soils, we anticipate open-cut methods may be used for construction.

The recommendations presented in this report are based on the assumed type of construction, structural loading, and grading concepts as presented in Section 1.1 of this report. If any of these items change significantly, we should be contacted to determine if revisions to our recommendations are necessary.

We appreciate the opportunity to be of service to you during this phase of the project.

Sincerely,
SMITH & ANNALA ENGINEERING CO.



Aaron J. Spreiser, E.I.T.
Staff Professional



Jonathan K. Alexander, P.E.
Principal

Distribution: (1) Addressee (via e-mail)

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Geotechnical Study

In accordance with our proposal dated February 26, 2024, and your authorization, we have performed a geotechnical evaluation for the McKellips Sewer Alignment located on McKellips Drive between La Rosa Drive and N. Cavalier Drive in Tempe, Arizona (Figure A-1 Appendix A). The purpose of this study was to examine the geotechnical profile at the site to evaluate the subsurface soils and their engineering properties. This information was used to develop geotechnical engineering recommendations for project design and construction. A description of the project, the scope of our geotechnical services, a description of our findings and our recommendations are presented in the following sections.

1.0 PROJECT UNDERSTANDING

The project consists of the design and construction of an 8-inch-diameter sanitary sewer line on East McKellips Road between La Rosa Drive and Cavalier Drive, at a depth of approximately 7-9 feet below the current ground surface.

2.0 SCOPE OF WORK

The scope of our services for this study included the following major task items:

- Reviewing readily available aerial photographs and published geologic literature, including maps and reports pertaining to the project site and vicinity.
- Coordinating our subsurface investigation activities with Dibble and the City of Tempe.
- Notifying Arizona 811 of the proposed exploration locations prior to performing our field explorations.
- Obtaining dry utility and Right-Of-Way permits with the City of Tempe.
- Drilling, logging, and sampling 8-inch-diameter exploratory borings at 2 locations. Details of this task and a log of the explorations can be found in Appendix B.
- Subcontracting roadway asphalt patch work to comply with city requirements.
- Performing laboratory testing on selected samples obtained from the exploratory borings. The details of the laboratory testing and the results are included in Appendix C.
- Preparing this report of our study presenting our findings, and recommendations.

Our scope of services for this study did not include environmental consulting services with respect to the identification or assessment of any hazardous environmental or biological materials that may be, or may not be, present at the site. A detailed scope of services and estimated fee related to the investigation of the presence or impact of pollution, contamination, or hazardous materials related to this site can be provided upon request.

3.0 FINDINGS

This section contains the results of our evaluation of the site as determined by the scope described in Section 2.0.

3.1 Current Site Conditions

The project site is located on East McKellips Road, between North La Rosa Drive and North Cavalier Drive, in Tempe, Arizona. At the time of our site investigation McKellips Road consisted of two west bound and two east bound lanes, with a center turn lane. The asphalt was recently resealed with repainted roadway markings. Residential streets can be found along McKellips Road to the north and south leading to residential communities. The site slopes gently down from west to east. Based on publicly available elevation data, the project site is situated on the order of 1,210 feet relative to mean sea level.

3.2 Past Site Conditions

Aerial photographs from public sources were reviewed for this project. The following table lists our observations made. The oldest photo we could obtain was taken in 1953.

Year of Photo	Site Description
1953	The alignment of McKellips Rd. appears similar to present day. Land north and south of McKellips Rd. appears to be a mix of undeveloped and developed land used for agriculture. No buildings appear to be constructed near the site.
1961	Residential home construction appears to begin along McKellips Rd.
1979	Nearly all the area north and southwest of McKellips Rd. has been completely developed with residential homes.
1987-2021	Site development appears similar to present day.

3.3 Subsurface Conditions

The following generalized description of the subsurface profile at the site is based upon the conditions we observed in a relatively few, widely spaced explorations. The thickness of strata described should be considered approximate and is inferred from changes observed between recovered samples or observed drilling conditions (changes in drilling effort, or from cuttings generated from auger advancement). Conditions could vary significantly between exploration locations. And although we did not observe evidence of or encounter buried structures such as underground utilities, septic tanks, dry wells, or fill materials during our site reconnaissance or within our explorations, such materials could be encountered during construction. Should different conditions be discovered during construction, when earthwork operations expose larger areas of the site, SAECO should be notified to allow revised recommendations to be provided.

- The pavement encountered consists of 5 to 5-½-inches of asphalt over 7 to 7-½-inches of aggregate base course. The asphalt has been recently sealed with nearby unsealed asphalt in fair to poor condition, with block cracking, alligator cracking and utility patches.
- The native soils encountered from below the pavement section extended to the total depths explored. These soils consist of medium plastic clayey sand with gravel, are light brown in color, moist to touch, dense to very dense in relative density, and have no to weak cementation.
- Practical auger refusal due to oversized particles was encountered at 11.9 feet below ground surface (bgs) in exploration B-2.

3.4 Groundwater

Groundwater was not encountered in any of our explorations during the field exploration. We did not perform long term monitoring of groundwater levels at the site and the observations reported in the report and on the log of explorations should be considered to only represent the groundwater conditions at the time and location of our explorations. Based on well data from the Arizona Department of Water Resources, the depth to regional groundwater has historically been measured between approximately 60 to 150 feet below the surface near the site 15 wells within 1-mile of the site with groundwater depths reported from 1992 to 2021. Groundwater levels may fluctuate due to seasonal variations in precipitation, irrigation, groundwater withdrawal, and other factors. Shallow perched groundwater zones are sometimes encountered near leaking utility lines or near stormwater retention basins.

Groundwater seepage could occur within excavations that approach the bedrock surface. Pumping from sumps may be utilized to control water within the excavations. A more complete dewatering plan and additional efforts will be required for significant groundwater flow, or where excavations penetrate groundwater to a significant depth.

3.5 Geologic Setting

Arizona can generally be divided into three geological provinces; the Colorado Plateau in the north, the Basin and Range in the deserts of the south and west, and a Transition Zone in between. This site lies within the Basin and Range Province.

The Basin and Range Physiographic Province is dominated by extensional tectonics, typified by broad alluvial valleys separated by steep, discontinuous, sub-parallel mountain ranges. The mountain ranges generally trend north-south and northwest-southeast. The basin floors consist of alluvium with variable thickness extending up to several thousands of feet. Intermittent volcanic activity also occurred within this region.

The Phoenix Metropolitan Area covers an area of about 9,000 square miles in a topographic basin bounded by the Transition Province Bradshaw and Usary Mountains to the north, the McDowell and Superstitions Mountains to the east, South Mountain to the south, the Sierra Estrella Mountains to the southwest, and the White Tank Mountains to the west. The Phoenix Mountains form a predominant range near the center of The City. Rocks found in the ranges include andesitic volcanics, limestone and sandstone sedimentary rocks, granites, and metamorphics (predominately granitic parent-rock). As is typical of the Basin and Range Province, these ranges have broad piedmont surfaces extending at fairly uniform slopes of 5 to 20 miles away from much steeper mountain fronts (bajadas). The bajadas may be erosional bedrock surfaces, called pediments, or they may be mantled by fan gravels and dissected by deep washes. The ephemeral streams of the piedmont areas convey water and sediment from the mountain fronts to the valley floors in the basin during occasional, but often intense rainstorms. Coarser gravel and boulders are deposited mainly on the piedmont, while the finer fraction of the load, including sand, silt, and clay, are conveyed to the valley floors, where significant fills, up to 9,000-feet-thick, have built up.

The floor of the basin is generally a broad and flat plain. The principal watercourses in this basin (The Salt River, Gila River, New River, Agua Fria River, and Hassayampa River) collect drainage principally off the Mogollon Rim and eastern Arizona and from within this basin, ultimately outletting the basin to the southwest. Meanders, downcutting, and flood events have left numerous terrace features and relatively unconsolidated deposits of boulders, cobbles, gravels, sands, silts and clays adjacent to the banks of the watercourses.

3.6 Subsidence and Earth Fissures

Land subsidence and earth fissures are present in numerous alluvial basins in southern Arizona. Due to historic pumping of large volumes of groundwater at rates far exceeding recharge, the alluvium has undergone consolidation, resulting in large areas of land subsidence. The primary geologic hazard associated with subsidence is the formation of earth fissures, related to tensional stress caused by differential consolidation of the alluvial materials. This differential consolidation is often related to the presence of irregular buried bedrock surfaces and/or buried bedrock ridges or pinnacles.

Beginning in the early 1990's, ADWR has performed regular mapping of 18 land subsidence features in alluvial basins across the state of Arizona using remote sensing techniques. This site is not located in an area that ADWR has monitored for land subsidence.

Based on our review of published references (Arizona Geological Survey, 2024) and based on our site reconnaissance, there are no known or documented earth fissures on the subject site. The closest documented earth fissures, based on our research, were located approximately 10.4 miles to the northwest of the project site. If groundwater withdrawal continues, further subsidence and the formation of new fissures or the extension of existing fissures is possible. Prediction of future earth fissure locations is not possible. However, in our opinion, land subsidence and earth fissures are not anticipated to be a design or construction issue for this project.

3.7 Faulting and Seismicity

The site lies within the Sonoran Zone, which is a relatively stable tectonic block located in southwestern Arizona, southeastern California, southern Nevada, and northern Mexico. This nearly stable block is bounded by tectonically active regions to the northeast and southwest. This zone is characterized by sparse seismicity and few Quaternary faults (Euge et al., 1992).

The nearest fault consists of the Carefree fault zone, located 22 miles northeast of the site. Less than 3 m (9.84 feet) of displacement has occurred along this fault within upper to middle Pleistocene deposits (150,000 to 750,000 years) (Pearthree, 1995).

Seismic design considerations are presented in Section 4.6 of this report.

3.8 Liquefaction

Based on the lack of near surface water, the low ground motion hazard (relatively low seismic ground accelerations), and the consistency/relative density of the surface soils, the likelihood or potential for liquefaction is considered negligible at this site.

3.9 Hydrocompactive Soils

Hydrocompactive (collapsible) soils generally exhibit low to moderate compressibility at existing low moisture contents. However, under increasing moisture content (such as from improper site drainage, excessive irrigation, and leaking utilities) and foundation loading, these soils can “collapse” (experience significant and rapid volume reduction when wetted). This occurs primarily as a result of the breakdown of the soil structure as light calcium carbonate cementation or bonding between sand particles softens or weakens under increased moisture content. Wetting and loading history of the soil influence the collapse potential, and a soil may collapse under even relatively low loads, such as that imposed by pavement structures or small embankments, when the soil moisture content exceeds past levels. Often, the placement of a new structure changes the drainage or evapotranspiration regime of the soil, increasing the likelihood of a collapse event (Houston, et al., 2002). Empirical identification of soils with collapse potential include some or all the following conditions (adapted from Beckwith, 1979):

- Plasticity Index (PI) less than 10
- Dry density less than 95 pounds per cubic foot (pcf)
- Moisture content less than 8 percent
- SPT N-value less than 15 blows per foot

Collapsible soils can also be identified using 1-dimensional consolidation testing (as generally described by ASTM D2435) in the laboratory. In this test, relatively undisturbed samples (typically collected from driven ring-lined samplers) are axially loaded to typical foundation stresses and then submerged in water, activating the potential collapse mechanism.

Based on the information collected from our site investigation it appears the near surface soils have a low potential for collapse. It is possible that zones of collapsible soils are present on the site and we recommend a geotechnical professional or their representative perform additional observations of the site during construction activity.

3.10 Expansive Soils

The soils encountered in our explorations consist of clayey sand with medium plasticity that exhibits low swell potential (less than 1.5 percent swell) when compacted and inundated with water while subject to light loading similar to a floor-slab. On-site soils generally appear suitable for use and engineered fill at the site, additional details concerning the use of on-site soils as fill material are provided in Section 4.5.6.

4.0 RECOMMENDATIONS

From a geotechnical standpoint, we believe the site is suitable for the proposed construction provided the recommendations provided are followed. Some general geotechnical considerations for site design and construction include:

- Dense to very dense on-site soils should be suitable for open-cut methods.
- Manholes or other structures may bear on relatively undisturbed native soils.
- Native soils are suitable for re-use as engineered fill.
- Difficult excavation conditions may be encountered below 7 feet.

The following sections provide our recommendations for the design and construction of the project. We should be contacted for additional recommendations if the proposed construction or anticipated foundation loads are changed from the project description in Section 1.0 of this report, or if significant changes occur at the site with respect to the site conditions described in Section 3.1 of this report.

4.1 Pipeline Design and Construction

This section contains the information for the design and construction of buried rigid and flexible pipelines. We have assumed the pipelines will be constructed using open trench methods.

4.1.1 Soil Loads on Buried Rigid Pipelines

Soil loads on buried rigid pipes, such as clay, and reinforced concrete, can be determined using the following formula:

$$W_c = C_d \gamma_w B_d^2$$

Where:

W_c	Stress on pipe from trench backfill
C_d	Load Coefficient
γ_w	Moist Unit Weight of Soil (pcf)
B_d	Width of trench at top of pipe (ft)

The load coefficient C_d is affected by the type of backfill, the degree of backfill compaction, the trench width, and pipe installation depth. Where the ratio of backfill depth above the top of the pipe (H/B_d) is at least 1, and the trench width at the top of the pipe is less than 3 times the pipe diameter, the load coefficient C_d can be determined from the following:

$$C_d = \frac{1 - e^{-K_{\mu'} \left(\frac{H}{B_d}\right)}}{2K_{\mu'}}$$

Where:

K	Active Earth Pressure coefficient
μ'	Friction Coefficient between backfill and trench walls
H	Height of backfill above the top of the pipe (ft)
B_d	Width of trench at top of pipe (ft)

The product $K_{\mu'}$ can generally be estimated as follows based on soil type:

Soil Type (USCS)	Maximum recommended value of $K_{\mu'}$
Granular materials without cohesion	0.190
Sand and gravel	0.165
Saturated topsoil	0.150
Ordinary clay	0.130
Saturated Clay	0.110

Based on the information we collected for this study we recommend using a value of 0.150 for $K_{\mu'}$ and a soil backfill density of 125 pcf (moist unit weight).

The soil loads on the pipeline as determined using this method do not include live loads from vehicle traffic. Loading imposed from vehicle and other concentrated surface loads may be analyzed using the information from Section **Error! Reference source not found..**

4.1.2 Soil Loads on Buried Flexible Pipelines

Generally the deflection of buried flexible pipes (including pipe made of welded steel, and most plastics) from loading may be determined using Spangler's Iowa Deflection Formula:

$$\Delta x = \frac{kWr^3}{EI + 0.061E'r^3}$$

Where:

Δx	Horizontal deflection of the pipe (in)
k	Bedding constant (recommend using 0.1)
W	Load per unit length of pipe (lbs/linear-in)
r	Pipe radius (in)
E	Pipe wall elastic modulus (psi)
I	Pipe wall moment of inertia (in ⁴ /in)
E'	Modulus of soil reaction (psi)

The bedding constant (k) relates the depth of "pipe seating" into the bedding materials beneath the pipe. The soil load (W) in the above equation may be determined as follows:

$$W = C_P(D_{Load} + P_L)$$

Where:

C_P	Load transfer coefficient (recommend using 0.8)
D_{Load}	Soil overburden pressure (psi)
P_L	Vehicle live load (see section 4.3.3)

The modulus of soil reaction (E') relates to the stiffness of the soil surrounding the pipeline. The modulus is affected by trench width, pipe diameter, modulus of the backfill, and modulus of the trench walls. We recommend the following table be used for determining E' for this project:

Depth to pipe springline (ft)	E' (psi)
Less than 7	700
7 to less than 15	1,500

4.1.3 Vehicle Live Loads

Vehicle loads may be analyzed as follows:

$$P_L = \frac{3I_f W_L H^3}{2\pi R^5}$$

Where:

P_L	Soil stress imposed on pipe from surface load (psf)
I_f	Impact factor
W_L	Live load (lbs)
H	Height of backfill above top of pipe
R	Distance from load to the top of the pipe (ft)

The impact load I_f can be estimated as follows:

Value of H (ft)	I_f
Less than 1	1.3
From 1 to less than 2	1.2
From 2 to less than 3	1.1
3 or greater	1.0

4.1.4 Thrust Blocks

The soil reaction for thrust blocks for buried pipelines and pipe jacking can be considered using the following:

$$R_p = \frac{300(D_2^2 - D_1^2)}{F.S.}$$

Where:

R_p	Block Reaction (lbs)
D_2	Depth from ground surface to bottom of block (ft)
D_1	Depth from ground surface to top of block (ft)
F.S.	Factor of Safety (1.5 is recommended)

4.2 Bearing Capacity Recommendations

Recommendations for the design of foundations for manholes, vaults, and valve structures with respect to bearing capacity, estimated settlement, and other geotechnical considerations are provided in this section of the report. The parameters provided below are contingent on following the earthwork recommendations provided in the Section 4.5.3. If conditions are encountered during construction that significantly differ from what is described in Section 1.0, SAECO should be notified to provide additional recommendations.

Recommended bearing pressures are presented in the following table. The average footing bearing pressure should not exceed the allowable equivalent uniform bearing pressure presented below. However, peak edge stresses may exceed this value provided the resultant passes through the middle third of the footing base. Continuous footings should have a minimum width of 16 inches, and isolated column footings should have a minimum width of 24 inches. The allowable soil bearing pressures may be increased by one-third when considering total loads including loads of short duration such as wind or seismic forces.

Footing Depth Below Finished Grade ¹ (ft)	Bearing Material	Allowable Equivalent Uniform Bearing Pressure (psf)
1.5 (Min.)	Undisturbed Native Soils	2,500
4	Undisturbed Native Soils	4,000
5	Undisturbed Native Soils	5,000
7 or Greater	Undisturbed Native Soils	6,000

Notes:

1. Finished grade is defined as the lowest point within, and 5 feet beyond, the structure's footprint (not including pipe penetrations).

Total foundation settlements for the expected structural loading conditions are estimated to be less than about 1-inch, provided foundation bearing soils remain at their present, natural moisture conditions. Differential foundation settlements should be on the order of about ½-inch or less for these estimated total settlements.

4.3 Lateral Earth Pressures

Based on the information observed during our field investigation and laboratory testing, the following soil properties may be considered for permanent and temporary structures affected by lateral earth pressures:

Stratum	Depth (ft)	Material Description	Effective Unit Weight (pcf)	Effective Cohesion ¹ (psf)	Friction Angle ϕ (degrees)
Stratum 1	0-7	Dense Clayey Sands with Gravel	125	100	34
Stratum 2	7-16.5	Very Dense Clayey Sands with Gravel and Cobbles	135	100	36

Notes:

1. For permanent structures, we recommend ignoring the soil strength contribution from cohesion

The following ultimate lateral earth pressures may be considered for design of structures subject to lateral loading:

<u>Equivalent Fluid Lateral Earth Pressure¹</u>		
Material	Type	PSF per linear foot of wall or foundation
Undisturbed Clayey sand with Gravel	Active	35
	Passive	450
	At-Rest	55
Compacted On-Site Materials	Active	45
	Passive	400
	At-Rest	55

Note:

1. The recommended lateral earth pressures are suitable for unsaturated soils, level backfill behind and in front of retaining walls, and properly compacted backfill.

The ultimate lateral resistance can be taken as the sum of the frictional resistance and passive resistance, provided that the passive resistance does not exceed one-half of the total ultimate resistance. The passive resistance may be increased by one-third when considering loads of short duration, such as wind, or seismic forces. Where conditions include restrained structures the at-rest pressure provided should be considered as acting on the walls. Where foundations are designed to resist lateral loading, they should preferably be proportioned such that the resultant force from total loads, including lateral loading, falls within the kern (i.e., middle one-third of the footing base).

4.4 Excavation Conditions

The excavation conditions described in this section are based on our sub-surface explorations performed at the site, a review of other published geologic information, and our professional experience. It may not be possible for others to duplicate our interpretation of the site characteristics. Those using the information provided in this report should keep in mind that our interpretations are based primarily on data collected from the site from a relatively small area of investigation.

Hollow-stem auger drilling methods were used to advance borings. One exploration was advanced to its proposed depth of 15 feet, and the other encountered refusal on oversize materials at a depth of 11.9 feet below the current ground surface. Because of the relative density of the soils and presence of oversize material, potential difficult excavation conditions may exist.

Given the dense nature of the near surface soils, we anticipate that open cut construction methods will not experience significant caving and sloughing. If areas of looser soils are encountered, additional efforts may need to be provided to prevent damage to pavements and other infrastructure located adjacent to proposed trenches.

Those involved with the construction of this site should review this report along with appropriate performance charts prepared by the manufacturer of the planned excavation equipment. This information can be used to assist in the selection of appropriate equipment that will be required to excavate the material anticipated to be encountered at this site. However, those using the interpretation of the site conditions contained in this report for any reason do so at their own risk.

4.5 Trench Construction

4.5.1 Minimum and Maximum Dimensions

The maximum trench width for pipeline placement should conform to the dimensions provided in the *MAG Uniform Standard Specification for Public Works*, Section 601.2.2 *Trench Widths*. The constraint on trench width should extend at least 1 pipe-diameter above the top of the pipe; above this zone the trench may be widened, for example to meet OSHA excavation guidelines.

Exceeding the maximum trench widths provided in the table could lead to increased pipeline stresses from soil backfill. If trench widths are exceeded the excess areas will require backfill with approved shading material to provide proper pipeline support.

We do not anticipate a significant potential for caving and sloughing using cut-and-cover construction methods along the alignment. If areas of looser soils are encountered during construction, shoring or other methods of trench stabilization may be required to maintain proper trench dimensions for pipeline construction.

4.5.2 Pipeline Foundation

Based on the information collected from explorations we anticipate undisturbed native soils will be suitable for pipeline foundation.

4.5.3 Subgrade Preparation for Other Structures

In general, manhole structures, valves, thrust blocks, and vault structures may bear on undisturbed soils (provided they are free of oversize particles) encountered at planned invert elevation (deeper than 7-feet below the current pavement surface).

If oversize materials are encountered, soils should be removed to a depth of 1 foot below the proposed foundation bottom elevation and replaced with compacted engineered fill with a maximum particle size of 3 inches.

If zones of loose material are encountered, these should be removed and replaced with compacted engineered fill.

4.5.4 Material Placement and Compaction

Foundation materials, pipe bedding, haunching and shading, and trench backfill with on-site soils and/or select imported soils should be placed in accordance with Section 601.3 *Foundation, Bedding, Backfilling, and Compaction* of the *MAG Uniform Standard Specification for Public Works*.

4.5.5 Other Trench Construction Considerations

All involved with the construction should be aware that slope height, slope inclination, or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, and/or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations). Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties.

Near-surface soils consist predominantly of dense clayey sands with gravel overlying very dense clayey sands with significant gravel content and some cobbles. These soils could be considered Type C soil when applying the OSHA regulations. For this soil type OSHA recommends a maximum temporary slope inclination of 1.5:1 (H:V) or flatter for excavations 20 feet or less in depth. Steeper cut slopes may be utilized for excavations less than 5 feet deep depending on the strength, moisture content, and homogeneity of the soils as observed in the field. Flatter slopes and/or trench shields may also be required depending on conditions encountered along the slope face. Actual safe slope conditions should be determined and monitored in the field at the time of construction by an OSHA-qualified “competent person.”

Excavations encountering seepage should be evaluated on a case-by-case basis. Where the stability of structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning may be required to provide structural stability and to protect personnel working within the excavation. Shoring, bracing, or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Arizona. In general, heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within 1/3 the slope height from the top of any excavation, unless incorporated into the engineered design.

Structures and utilities located adjacent to excavations may require additional support (under-pinned), or the excavation may need to be shored, to reduce the potential for damage. In general, structures or excavations will require additional support if any portion of the excavation enters a zone that extends down and away from the base of the structures at a 45-degree angle.

Excavations that enter the BNSF railroad right of way will need to be designed in accordance with *UPRR and BNSF Guidelines for Temporary Shoring*, (2021). The railroad has restrictions on where excavations can occur within their right of way, requires all excavation be shored, prescribes additional surcharge loading on the shoring systems, and has strict deflection limits that may not be exceeded.

A pre-construction inspection, and vibration monitoring during construction, could be considered to reduce potential claims arising from construction activity adjacent to existing structures.

4.5.6 Fill Materials

On-site and imported soils that exhibit low expansive potential when compacted are generally suitable for re-use as fill in all areas, provided they are free of debris and organic material, and all particles are less than 3 inches in size. Ideally fill materials placed to support structures will be placed in a fairly uniform thickness beneath the structure in order to reduce the potential of differential settlement, if this cannot be accomplished due to site constraints, abrupt changes in fill thickness should be minimized.

- **On-Site Soils**

The on-site soils tested in the laboratory exhibit low swell potential and generally appear suitable for use as engineered fill material below structures and slabs, provided any oversized materials (particles greater than 3 inches) encountered are screened out to prevent point loading.

- **Imported Soils**

Soils imported from off-site sources for use in new fills below structures or rigid concrete pavements should meet the requirements listed in the following table:

Property	Specification	Remarks
Maximum Particle Size	3 inches	None
Percent Passing No. 4 Sieve	30-100	None
Percent Passing No. 200 Sieve	2-50	None
Maximum Plasticity Index	15	None
Maximum Swell Potential	1.5%	Based on a laboratory sample compacted to 95% of the maximum density at 3% below optimum moisture content as determined by the Standard Proctor (ASTM D698)

The geotechnical consultant should evaluate any imported materials and details of their placement prior to importation.

- **Aggregate Base Course**

Aggregate base course used beneath pavement structures should meet the requirements of MAG 702

4.5.7 Bedding/Shading Sand

We recommend bedding/shading sand for pipelines conform to the ASTM C 33, fine aggregate standard specification for concrete aggregates with the following gradation when tested in accordance with ASTM C136 and C117:

Sieve Size	Percent Passing
3/8-inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

Bedding/shading shall be moisture conditioned and placed in maximum 8-inch loose lifts. Consolidation should be achieved by hand operated vibrating plate compactors or other compaction equipment suitable for the application.

At the discretion of the Owner and/or Engineer, a 3/8-inch pea gravel or CLSM may be substituted for the pipe bedding and shading material.

Where pipelines penetrate structures, CLSM material should be used as backfill from pipeline foundation to finish grade extending from the perimeter of the structure to a distance away from the structure equal to the depth of the trench.

CLSM should generally consist of 1-sack of portland cement per cubic yard concrete aggregate. The 28-day compressive strength of the material should range between 250 and 1000 psi.

4.5.8 Compaction

We recommend subgrade, fill, backfill, subbase fill, or base material be prepared and placed to the relative compaction and moisture content provided below. Lift thickness for backfill will be dependent upon the type of compaction equipment utilized but should generally be placed in lifts not exceeding 10 inches in loose thickness. Fills should be moisture conditioned and compacted by appropriate mechanical methods.

Recommendations for Compaction of On-Site and Imported Soils

Material / Location	Percent Compaction (ASTM D698)	Moisture Content Range (ASTM D698)
Below Foundations	95 min.	Opt. -3 to Opt. +3 percent
Above Foundation Level and Below Concrete Slabs or Flatwork	90 min.	Opt. -3 to Opt. +3 percent ¹
Trench backfill, not deeper than 4 ft. below finished grade	95 min.	Opt. -3 to Opt. +3 percent
Trench backfill, 4 ft. or deeper below finished grade	95 min.	Opt. -3 to Opt. +3 percent
Base Course	100 min.	Opt. -3 to Opt. +3 percent ¹
Miscellaneous Backfill (other backfill areas not used for foundation, pavement, or utility line support)	90 min.	Opt. -3 to Opt. +3 percent

Notes:

1. Maintain in a moist condition until overlying structures, slabs, or pavements are constructed

4.5.9 Workability

If site grading is performed during or after wet weather, or if ponding or leaking utilities are present, then near-surface site soils may be above optimum moisture content. This could make it difficult to achieve specified compaction, material pumping, and equipment maneuverability problems. If this occurs, disking for aeration followed by sufficient drying time (possibly several days depending upon the weather), chemical treatment, replacement with drier material, stabilization with a geotextile fabric or grid, or other methods may be implemented to reduce excessive soil moisture or otherwise facilitate earthwork operations.

4.5.10 Excavation Conditions

Hollow-stem auger drilling methods were used to advance both borings, each of which encountered relatively difficult conditions during advancement. Exploration B-2 encountered practical auger refusal on apparent dense gravel and cobbles.

We believe the excavation conditions encountered in our borings generally represent the conditions to be expected across the site; however, excavation conditions are dependent on many factors including: variability of cementation, presence and size of cobbles and boulders, variability of relative soil density, excavation size, excavation equipment, operator experience, and operator effort. It may not be possible to correlate all the potential variables with the results of what we experienced during our exploration advancement in terms of the actual excavation conditions that could be encountered. Those involved with the construction of this site should use the information provided in this report as a guideline for the conditions that generally exist only at each boring location. Those using this report should understand the limitations of the methods used to obtain the data and should use the information with caution and only as a guideline.

Those involved with the construction of this site should review this report along with appropriate performance charts prepared by the manufacturer of the planned excavation equipment. This information can be used to assist in the selection of appropriate equipment that will be required to excavate the material anticipated to be encountered at this site. However, those using the interpretation of the site conditions contained in this report for any reason do so at their own risk.

Prospective contractors should exercise caution and assume the associated risks if the information provided within this report is used to determine the suitability of any equipment used for construction of the proposed project.

4.5.11 Temporary Excavations

Those involved with the construction of this project should be aware that slope height, slope inclination, or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, and/or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations). Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties.

Trenches over 20 feet deep (if needed) should be designed by the contractor's engineer based on alignment-specific soil properties and settlement-sensitive features. Excavations encountering seepage, if any, should be evaluated on a case-by-case basis. Where the stability of structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning may be required to provide structural stability and to protect personnel working within the excavation. Shoring, bracing, or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Arizona. In general, heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within 1/3 the slope height from the top of any excavation, unless incorporated into the engineered design.

4.6 Seismic Design Considerations

Building structural response to seismic events is based on the structure's Seismic Design Category, which is partially dependent on the Seismic Site Classification. The seismic site classification is based on the soil properties within 100 feet of the surface and the methods outlined in the International Building Code and American Society of Civil Engineers publication ASCE-7. We recommend this site be classified as Site Class C.

The classification is based on a weighted average of the standard penetration testing performed at the site and our experience at similar sites in the region.

The proposed improvements should be designed in accordance with the requirements of governing jurisdictions and applicable building codes. The following table presents the seismic design parameters

for the site in accordance with Minimum Design Loads for Buildings and Other Structures (American Society of Civil Engineers ASCE/SEI 7-16) guidelines and mapped spectral acceleration parameters (United States Geological Survey [USGS], 2011):

Seismic Design Factors	Value
Site Class	C
F_a , Site Coefficient	1.3
F_v , Site Coefficient	1.5
S_s , Mapped Spectral Acceleration at 0.2-second Period	0.185 g
S_1 , Mapped Spectral Acceleration at 1.0-second Period	0.066 g
S_{MS} , Spectral Acceleration at 0.2-second Period Adjusted for Site Class	0.241 g
S_{M1} , Spectral Acceleration at 1.0-second Period Adjusted for Site Class	0.099 g
S_{DS} , Design Spectral Response Acceleration at 0.2-second Period	0.161 g
S_{D1} , Design Spectral Response Acceleration at 1.0-second Period	0.066 g

Notes:

1. Site soil classification has been estimated using a combination of the soils encountered in the explorations and our understanding of the geological conditions at the site.

4.7 Soil Corrosion and Concrete Exposure

SAECO performed laboratory testing for parameters that commonly affect the corrosion of buried metal elements. Details of the test methods used to determine the parameters and the results are presented in Appendix B. The effect of these properties on buried metal elements is complex and other factors we have not tested for may also be present at the site. The test results we have provided should be used to assist others in determining the type and degree of corrosion protection that may be required. We recommend a certified corrosion specialist be consulted to assist you with the specific needs of your project.

Laboratory chemical tests performed on samples of the on-site soils indicated sulfate contents of up to 3 parts per million. Based on the American Concrete Institute (ACI) 318 Building Code, the potential for sulfate attack is negligible for water-soluble sulfate contents in soils ranging from 0 percent to 0.10 percent by weight (0 ppm to 1,000 ppm). We recommend the use of Type II cement for construction of concrete structures in contact with soil at this site. The structural engineer should select the concrete design strength, water-cement ratio, slump at placement, etc., based on the project specific conditions and also based on the recommendations presented in ACI.

4.8 Pre-Construction Conference

We recommend that a pre-construction conference be held. Representatives of the owner, the civil engineer, the geotechnical consultant, and the contractor should be in attendance to discuss the project plans and schedule. Our office should be notified if the project description included herein is incorrect, or if the project characteristics are significantly changed.

5.0 LIMITATIONS

Some variations in the soil conditions are anticipated between the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to the recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, our firm should also be notified.

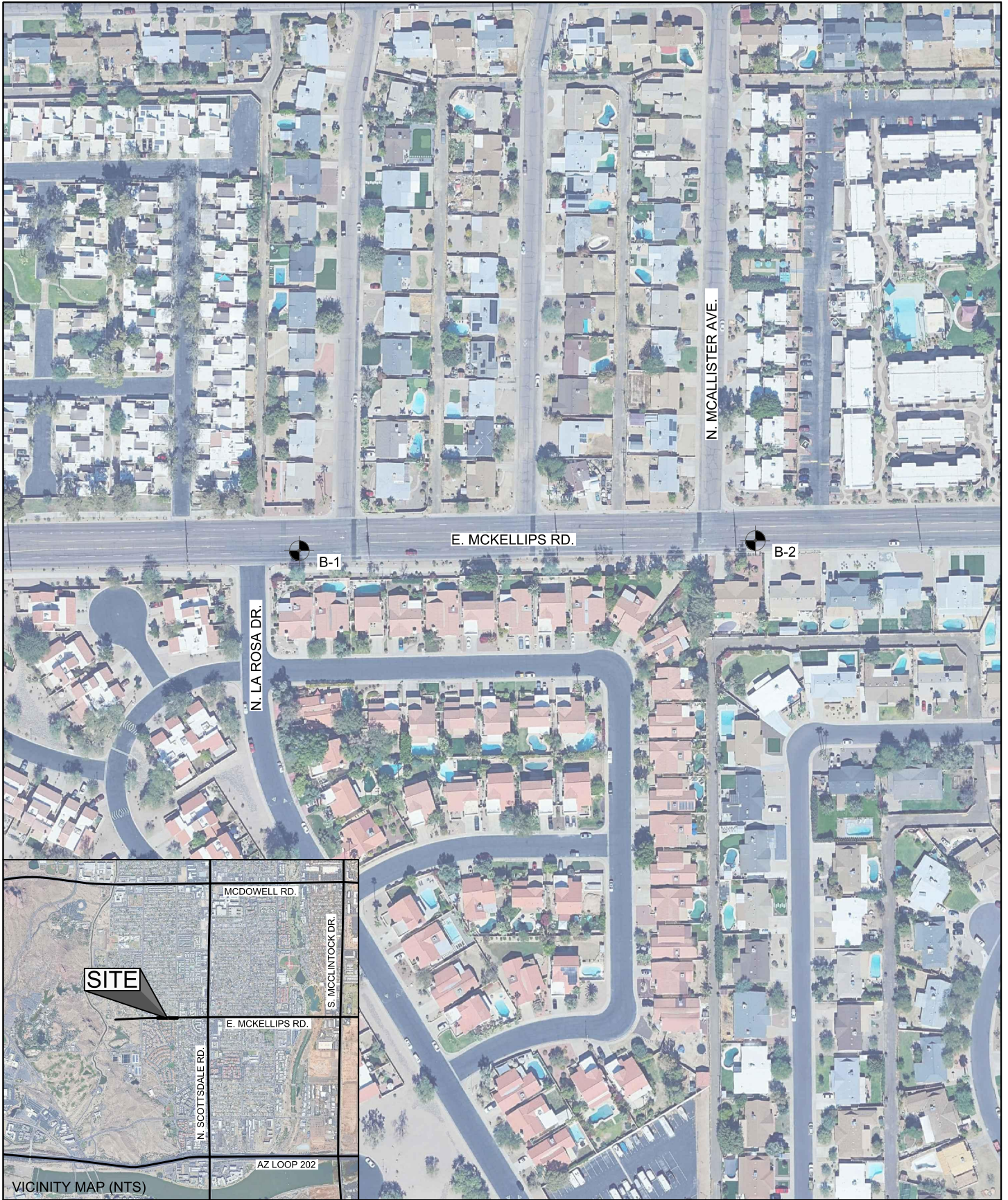
The exploration, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report.

This report may be used only by the client and only for the purposes stated within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time. Similarly, future irrigation, broken water or sewer pipelines, or other factors may adversely influence the project. Any party other than the client who wishes to use this report shall notify SAECO of such intended use. SAECO may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release SAECO from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold harmless SAECO from any claim or liability associated with such unauthorized use or non-compliance.

6.0 REFERENCES

- American Concrete Institute, Building Code Requirements for Structural Concrete (ACI 318-19) and Commentary (ACI 318R-19), 2019.
- American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards.
- Applied Technology Council, 'ATC Hazards by Location – Seismic' (online calculator), [Retrieved August 6, 2024].
- Arizona Department of Transportation, Geotechnical Project Development Manual, Version 2.0, 2022
- Arizona Department of Water Resources (ADWR), Well Registry (online map viewer), [Retrieved August 8, 2024].
- Arizona Geological Survey, Natural Hazards in Arizona Viewer, (online map viewer), [Retrieved August 8, 2024].
- International Code Council, International Building Code, 2021.
- Maricopa Association of Governments, Uniform Standard Specifications and Details for Public Works Construction, 2011.
- Pearthree, P.A., Quaternary Fault Data and Map for Arizona: Arizona Geological Survey, Open-File Report 98-24, 1998.
- Schumann, H.H., and Genualdi, R.B., Land subsidence, earth fissures, and water-level change in southern Arizona: Arizona Bureau of Geology and Mineral Technology Map M-23, scale 1:1,000,000, 1986.
- Smith & Annala Engineering Co., In-house proprietary information.

APPENDIX A



MCKELLIPS SEWER ALIGNMENT
MCKELLIPS ROAD & LA ROSA DR.
TEMPE, ARIZONA

<small>DRAWN BY:</small> AJS	<small>CHECKED BY:</small> JKA	<small>PROJECT NUMBER:</small> 44.24.2328
<small>CLIENT:</small> DIBBLE ENGINEERING	<small>DATE:</small> 08/08/2024	<small>SCALE:</small> 1" = 200'

SMITH & ANNALA
ENGINEERING CO.
SAECO
GEOTECHNICAL ENGINEERING • CONSTRUCTION QA/QC • ENVIRONMENTAL SERVICES

MAP KEY

 APPROXIMATE BORING LOCATION

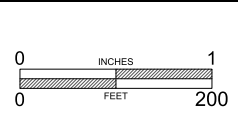


FIGURE TITLE:
EXPLORATION MAP

FIGURE NO.:
A-1

APPENDIX B

APPENDIX B FIELD INVESTIGATION

Our field investigation was performed on July 22, 2024. During the field investigation a representative from SAECO:

- Noted the current site conditions from cursory observations
- Sited the explorations in the field by estimating bearings and distances from site features shown on aerial photographs, locations marked by the client, the use of a hand-held global positioning device.
- Estimated surface elevations at the explorations using a builder's-level referencing a temporary benchmark (shown on the site plan), a benchmark with an elevation referenced to mean sea level, estimating from topographic maps, etc...
- Directed the exploration subcontractor with respect to total depth of exploration and the type and depth of any sampling performed.
- Visually classified the subsurface materials exposed during the advancement of the explorations. In general accordance with ASTM D2487 (Visual Manual Procedure) with some modifications from SAECO.
- Created a log of the explorations, including subsurface materials encountered, results of field testing performed, and a record of any samples collected.
- Appropriately labeled and packaged the samples collected for transport to the SAECO laboratory.

Soil Borings: Soil borings performed as part of the investigation were extended using a Dietrich Model D-120 Central Mine Equipment, Model CME-75 truck mounted drill-rig utilizing 8-inch (OD) diameter hollow-stem auger operated by Southlands Engineering. Upon completion the borings were backfilled with cuttings derived from auger advancement and asphalt patched utilizing the City of Phoenix high volume C- $\frac{3}{4}$ ", 5.0% design.

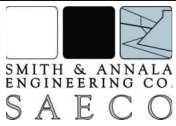
Descriptions of the types of samples obtained during the field exploration are presented below:

Bulk Samples: Bulk samples are typically bags of loose soil or rock material obtained from auger cuttings of borings or from the walls or bottom of a test trench.

Ring Samples: Relatively undisturbed samples were obtained with a modified ring-lined split barrel sampler. It was driven into the bottom of the borehole at selected depths with a 140-pound hammer free-falling from a height of 30 inches, in general accordance with ASTM D1586. The sampler had an external diameter of 3.0 inches and was lined with a stack of 1-inch long, thin brass rings with inside diameters of approximately 2.4 inches. The ring-lined samples were removed from the sample barrel, sealed in plastic bags, and placed in protective plastic sleeves with end caps.

Standard Penetration Test (SPT) Samples: Disturbed samples were obtained with a Standard Penetration Test sampler. The sampler had an external diameter of 2 inches and an unlined internal diameter of 1- $\frac{3}{8}$ inches. It was driven into the bottom of the borehole at selected depths with a 140-pound hammer

free-falling from a height of 30 inches, in general accordance with ASTM D1586. The blow counts reported on the logs are those for the last 12 inches of penetration. The soil samples were removed from the sampler and sealed in plastic bags.



Client: Dibble

Project Name: McKellips Sewer Alignment

Project Number: 44.24.2328

Project Location: Tempe, Arizona

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)



ABC: Aggregate Base Course



ASPHALT: Asphalt



SC: USCS Clayey Sand

SAMPLER SYMBOLS



Bulk Sample



Split-barrel ring-lined sampler, 2.4-inch I.D.



Standard Penetration Test

WELL CONSTRUCTION SYMBOLS

ABBREVIATIONS

- LL - LIQUID LIMIT (%)
- PI - PLASTIC INDEX (%)
- W - MOISTURE CONTENT (%)
- DD - DRY DENSITY (PCF)
- NP - NON PLASTIC
- 200 - PERCENT PASSING NO. 200 SIEVE
- PP - POCKET PENETROMETER (TSF)

- TV - TORVANE
- PID - PHOTOIONIZATION DETECTOR
- UC - UNCONFINED COMPRESSION
- ppm - PARTS PER MILLION
- ▽ - Water Level at Time Drilling, or as Shown
- ▼ - Water Level at End of Drilling, or as Shown
- ▽ - Water Level After 24 Hours, or as Shown



Client: Dibble

Project Name: McKellips Sewer Alignment

Project Number: 44.24.2328

Project Location: Tempe, Arizona

UNIFIED SOIL CLASSIFICATION (ASTM D-2487)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND	
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	$C_u \geq 4$ AND $1 \leq C_c \leq 3$	GW	WELL-GRADED GRAVEL	
			$C_u < 4$ AND/OR $1 > C_c > 3$	GP	POORLY-GRADED GRAVEL	
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL	
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL	
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	$C_u \geq 6$ AND $1 \leq C_c \leq 3$	SW	WELL-GRADED SAND	
			$C_u < 6$ AND/OR $1 > C_c > 3$	SP	POORLY-GRADED SAND	
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR MH	SM	SILTY SAND	
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND	
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT <50	INORGANIC	$PI > 7$ AND PLOTS > "A" LINE	CL	LEAN CLAY	
			$PI > 4$ AND PLOTS < "A" LINE	ML	SILT	
	SILTS AND CLAYS LIQUID LIMIT >50	INORGANIC	LL (oven dried)/LL (not dried) < 0.75	OL	ORGANIC CLAY OR SILT	
			PI PLOTS > "A" LINE	CH	FAT CLAY	
	SILTS AND CLAYS LIQUID LIMIT >50	INORGANIC	PI PLOTS < "A" LINE	MH	ELASTIC SILT	
			ORGANIC	LL (oven dried)/LL (not dried) < 0.75	OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS	PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR			PT	PEAT	

SAMPLE TYPES

- SPT - Standard Penetration Test
- RING - Ring-lined Sampler
- BULK - Bulk Sample
- UD - Undisturbed Sample
- RC - Rock Core, HQ3 Core Barrel

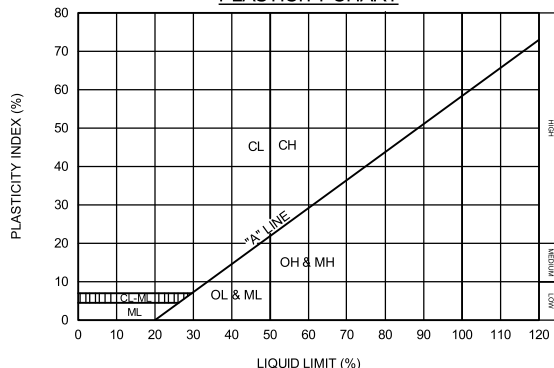
PARTICLE SIZE DEFINITION FOR SANDS AND GRAVELS

SOIL FRACTION	GRAIN SIZE
Boulders	12 inches +
Cobbles	12 inches to 3 inches
Gravel	
Coarse	3 inches to 3/4 inches
Fine	3/4 inches to #4 Sieve
Sand	
Coarse	#4 to #10 Sieve
Medium	#10 to #40 Sieve
Fine	#40 to #200 Sieve

OTHER TESTS OR COMMENTS

- (NR) - NO RECOVERY
- CN - CONSOLIDATION
- DS - DIRECT SHEAR
- SW - SWELL
- UC - UNCONFINED COMPRESSION
- RV - R-VALUE
- CBR - CALIFORNIA BEARING RATIO
- EI - EXPANSION INDEX
- PP - POCKET PENETROMETER (TSF)
- pH - pH OF SOIL
- RES - MINIMUM ELECTRICAL RESISTIVITY
- CHLOR - CHORIDE CONTENT
- SULF - SULFATE CONTENT
- THRM - THERMAL RESISTIVITY
- HSA - HOLLOW STEM AUGER
- REC - SAMPLE RECOVERY (%)
- RQD - ROCK QUALITY DESIGNATION

PLASTICITY CHART



CONSISTENCY / RELATIVE DENSITY DEFINITIONS

PENETRATION RESISTANCE (RECORDED AS BLOWS / FT)				
SAND & GRAVEL		COHESIVE SOILS		
RELATIVE DENSITY	N-VALUE BLOWS/FOOT*	CONSISTENCY	N-VALUE BLOWS/FOOT*	UNCONFINED COMPRESSIVE STRENGTH (TSF) **
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.50
MEDIUM DENSE	10 - 30	FIRM	4 - 8	0.50 - 1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST). ** VERY APPROXIMATE



Client: Dibble Project Name: McKellips Sewer Alignment
 Project Number: 44.24.2328 Project Location: Tempe, Arizona
 Date Started: 7/22/24 Completed: 7/22/24 Ground Elevation: 1216 ft Hole Size: 8 inches
 Drilling Contractor: Southlands Ground Water Levels:
 Drilling Method: Hollow Stem Auger At time of Drilling: Not Encountered
 Logged By: EDM Checked By: JKA At end of Drilling: Not Encountered
 Notes: _____ After Drilling: Not Encountered

Elevation (ft)	Depth (ft)	Bullnose Pen. (blows / ft)	Sample type/Interval	Blows per 6 in.	N-value (blows / ft)	Dry Unit Wt. (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing No. 4 Sieve (%)	Passing No. 200 Sieve (%)	Other Tests or Comments	Graphic Log	USCS Classification	MATERIAL DESCRIPTION
1215															Asphalt, 5.5-inches
				32 50/4"	(50+)										Aggregate Base Course, 7.5-inches
5				15 12 21	33										CLAYEY SAND, light brown, moist, dense to very dense, medium plasticity, no cementation
1210				21 50/3"	(50+)		5					CHLOR, SULF			
10				50/5"	100+										
1205				36 35 50/5"	100+										Weak cementation

Refusal at 11.9 feet. Gravel.

SAECO\BENCH BY COLUMNS - 041 - STD USLS (4) 51 (0)1 - ANSO - C:\USERS\SAATCHI\BENCHING\SMITH & ANNALA ENGINEERING\SAECO TEAM SITE - DOCUMENTS\5550542\PROJECT\3202044_24_2020 SEWER LINE - MCKELLIPS 44.A.RSG\REPORT DOCUMENT\3202044_24_2020 MCKELLIPS SEWER RESULTS.RPT

APPENDIX C

APPENDIX C LABORATORY TESTING

In-Place Moisture and Density Tests

The moisture contents of samples obtained from the field exploration were evaluated in general accordance with ASTM Test Method D 2216; dry unit weight was evaluated using procedures similar to ASTM Test Method D 2937. The test results are presented on the logs of the exploratory excavations in Appendix A.

Gradation

Gradation tests were utilized to aid in soil classification. Gradation testing was performed on selected representative soil samples in general accordance with ASTM D422. These test results were utilized in evaluating the soil classifications in accordance with the Unified Soil Classification System (USCS).

Atterberg Limits

Atterberg Limits tests were utilized to evaluate the plasticity characteristics of the soil, aid in soil classification, and to correlate with engineering properties such as shrink-swell potential. Tests were performed on selected representative soil samples in general accordance with ASTM D4318.

Swell Potential

Swell tests were performed in general accordance with ASTM D4546, Method B. The specimens were prepared by compacting a moisture conditioned sample to approximately 95% of the maximum density and at approximately 3% below the optimum moisture content as determined by ASTM D698 (Standard Proctor). The specimens were loaded with a surcharge load of approximately 100 pounds per square foot before inundation.

Resistivity and pH

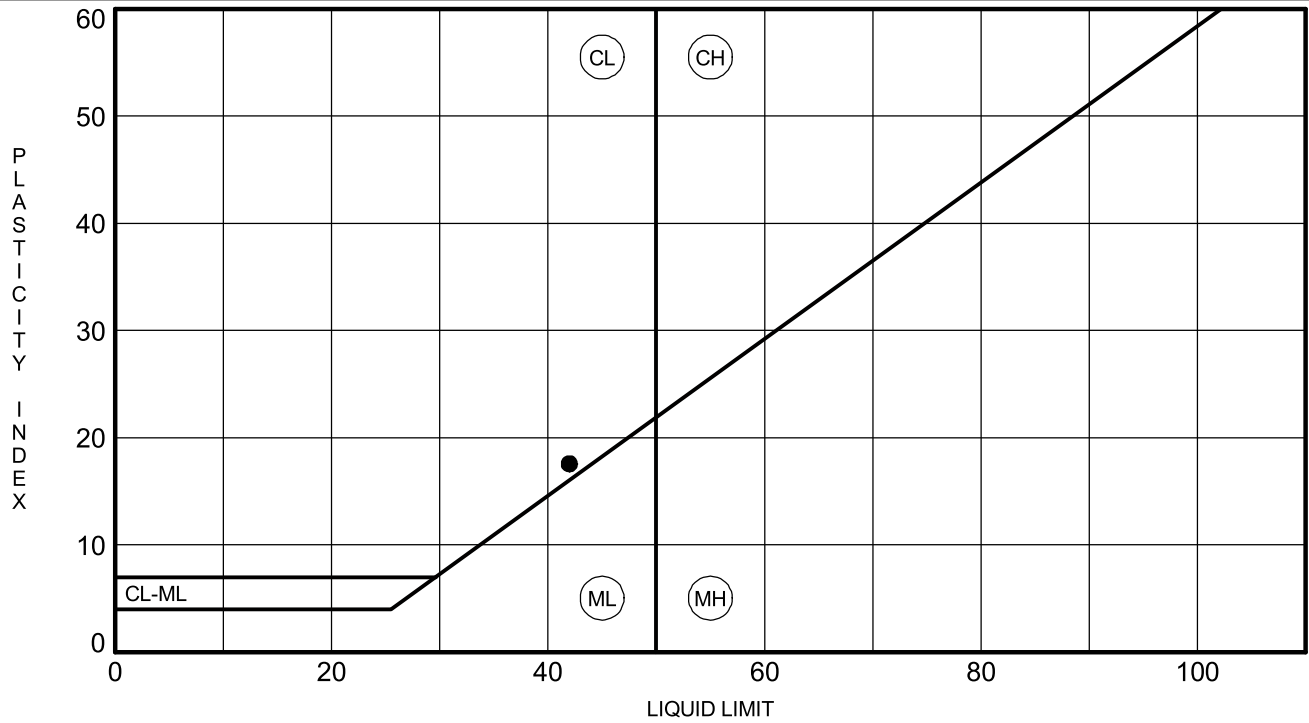
Resistivity and pH tests were performed to evaluate the corrosive potential of the site soils. Tests were performed in general accordance with ADOT Test Method 236.

Sulfate and Chloride

Sulfate and Chloride tests were performed to evaluate the corrosive potential of site soils toward portland cement concrete and ferrous metals. Tests were performed in general accordance with Arizona Test Method 733 and 736, respectively.



Client: Dibble Project Name: McKellips Sewer Alignment
 Project Number: 44.24.2328 Project Location: Tempe, Arizona



Borehole	Depth (ft)	LL	PL	PI	Fines (%)	Classification
● B-1	1.0-5.0	42	24	18	15	CLAYEY SAND with GRAVEL(SC)

ATTERBERG LIMITS - GINT STD US LAB QDT - 8/2014 - C:\USERS\ANNALAPRIESTER\SMITH & ANNALA ENGINEERING\SAECO\TAM SITE - DOCUMENTS\TESTS\GRADE\PROJECTS\2024\44.24.2328\SERVER LINE - MCKELLIPS & LA VOGUE\REPORT DOCUMENTS\44.24.2328_MCKELLIPS SEWER RESULTS.GPJ



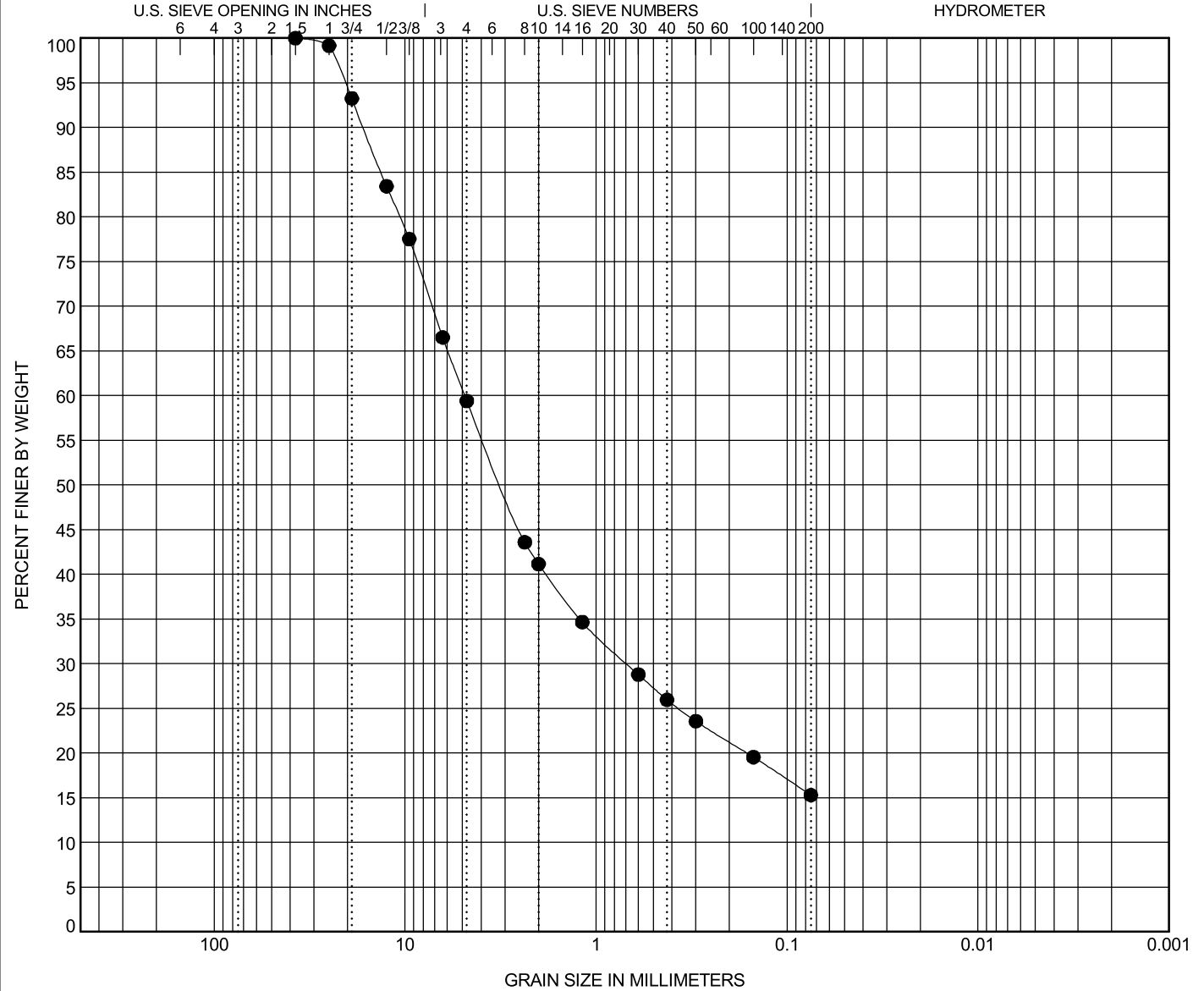
GRAIN SIZE DISTRIBUTION

Client: Dibble

Project Name: McKellips Sewer Alignment

Project Number: 44.24.2328

Project Location: Tempe, Arizona



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Borehole	Depth (ft)	Classification					LL	PL	PI	Cc	Cu
● B-1	1.0-5.0	CLAYEY SAND with GRAVEL(SC)					42	24	18		
Borehole	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Silt	%Clay		
● B-1	1.0-5.0	37.5	4.867	0.69		40.6	44.1	15.3			

GRAIN SIZE - CIVIL STD US LAB 027 - 8/924 - © USERRS/ARIZONA/PRUEBSMITH & ANNALA ENGINEERING/SAECO TEAM SITE - DOCUMENT PERFORMANCE PROJECT 5202444.24.2328 BEWER LINE - MCKELLIPS & LA ROSE REPORT DOCUMENT 1944.24.2328 MCKELLIPS SEWER RESULT.GPJ



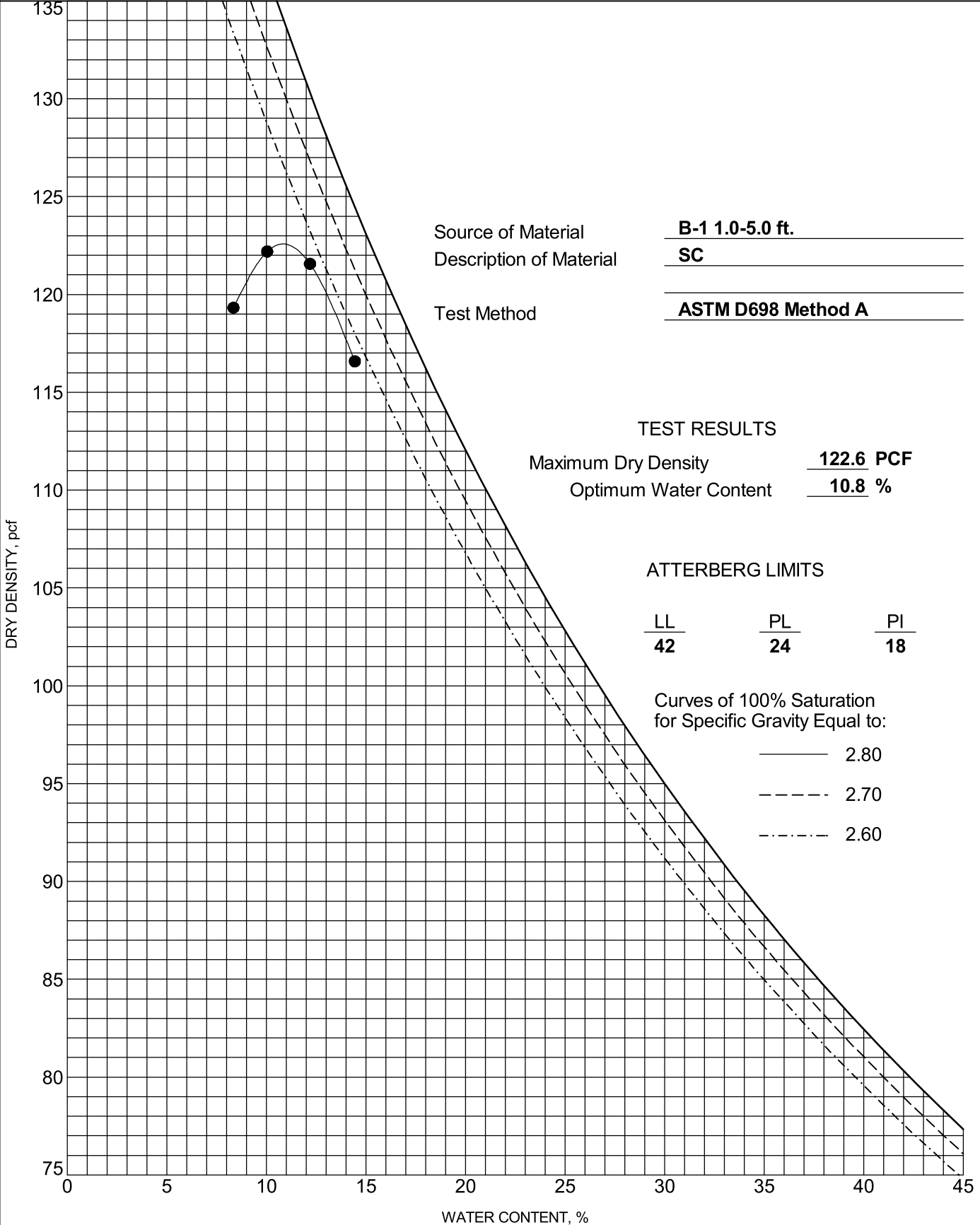
MOISTURE-DENSITY RELATIONSHIP

Client: Dibble

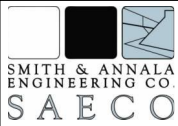
Project Name: McKellips Sewer Alignment

Project Number: 44.24.2328

Project Location: Tempe, Arizona



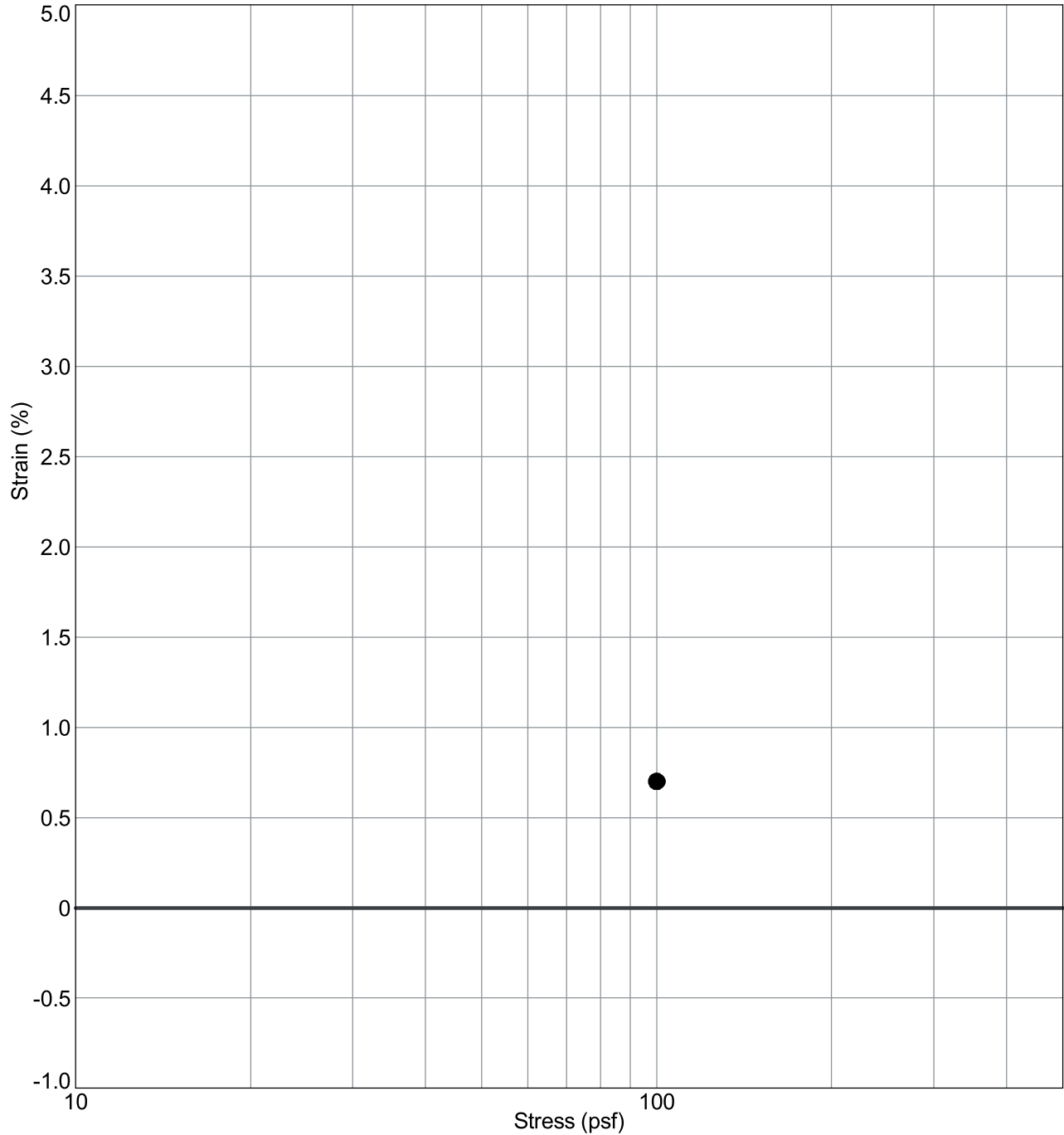
COMPACTON: GNT DTD US LAB 007 8954 - C:\USERS\ARON\SHREIBER\SMITH & ANNALA ENGINEERING\SAECO TEAM SITE - DOCUMENT TEST DAMAGE\PROJECT\300544_24_2328 SEWER LINE - MCKELLIPS & LA ROSE\REPORT DOCUMENT\44.24.2328 MCKELLIPS SEWER RESULT.GPJ



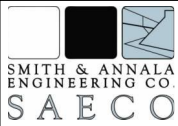
REMOLDED SWELL TEST

Client: Dibble Project Name: McKellips Sewer Alignment
 Project Number: 44.24.2328 Project Location: Tempe, Arizona

Samples remolded to 95% of maximum dry density and 3% below optimum moisture content as determined by ASTM D698, or AZ232b



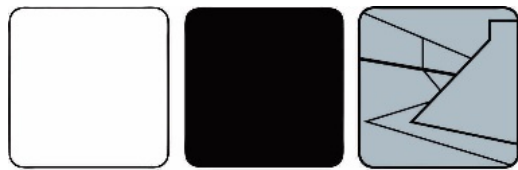
Borehole	Depth (ft)	Description of Materials	Rmld. DD	Rmld. WC	SWELL
● B-1	1.0-5.0	CLAYEY SAND with GRAVEL(SC)	116.5 PCF	7.8 %	0.7 %



SUMMARY OF LABORATORY RESULTS

Client: Dibble Project Name: McKellips Sewer Alignment
 Project Number: 44.24.2328 Project Location: Tempe, Arizona

Borehole	Depth (ft)	USCS Group Symbol	Liquid Limit	Plastic Limit	Plasticity Index	%>#4 Sieve	%<#200 Sieve	Water Content (%)	Dry Density (pcf)	Consol(-)/ Swell(+)(%)	pH	Minimum Resistivity (Ohm-cm)	Sulfate (ppm)	Chloride (ppm)
B-1	1.0-5.0	SC	42	24	18	41	15			+0.7	7.9	6000	3	5
B-1	2.5-3.5	SC						6.1	131.5					
B-1	5.0-6.0	SC						9.3	119.0					
B-2	7.5-8.3	SC						5.3					3	10



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