



NOTICE OF INVITATION FOR BIDS FROM UTILITY CONTRACTORS

IFB NO. 01-2023

POTABLE WATER LINE TO 1519 BUCK AND DOE ROAD (WEST WATER, PHASE 1A)

Notice is hereby given that the Hualapai Indian Tribe, hereinafter referred to as the "Tribe", is soliciting bids from utility contractors to construct a new water line in Peach Springs, located on the Hualapai Reservation, Arizona.

The Tribe invites Indian and non-Indian owned firms to submit sealed bids. The Tribe will select the bidder whose bid does not substantially exceed the amount of funds available for construction of the project, subject to applicable Indian Preference requirements and assessments of the Bidder's responsiveness and responsibility under federal law. Funds are derived from the Center of Disease Control's Tribal Public Health grant. The project shall achieve final completion and shall be ready for final payment no later than June 9, 2023 to meet the CDC's expenditure deadline

A complete copy of this IFB may be obtained from the tribe's website at: <http://hualapai-nsn.gov/>. Internet access is available at all public libraries. Any interested offerors without internet access may obtain a copy of this solicitation by calling (928) 769-2216, or a hard-copy may be obtained during regular business hours at the Hualapai Public Services Department, 941 Hualapai Way, Peach Springs, AZ. Respondents are invited to review the information and to submit their Bids in accordance with the criteria established within this IFB. Written questions regarding this IFB must be received by the Public Services Department no later than **April 27, 2023**. Questions may then be responded to by written amendment to this document. **Oral statements or instructions shall not constitute an amendment to the IFB.**

All submittals must be received by the due date and time assigned at the submittal location specified herein. **Any response received at the specified submittal location after the due date and time assigned will be returned unopened.** The Tribe reserves the right to reject any or all submittals, or to withhold the award for any reason it may determine, and to waive or not to waive any informalities in any submittal. All information regarding the content of the specific submittals will remain confidential until a contract is finalized or all proposals are rejected.

SUBMITTAL DUE DATE: May 3, 2023, at 2:00 P.M. LOCAL AZ TIME
SUBMITTAL LOCATION: Hualapai Public Services Department
941 Hualapai Way
Peach Springs, AZ 86434

PRE-BID CONFERENCE DATE: April 20, 2023
TIME: 2:00 P.M. LOCAL AZ TIME
LOCATION: Hualapai Public Services Department
941 Hualapai Way, Peach Springs, AZ 86434

QUESTIONS SHALL BE DIRECTED TO: Philip G. Wisely, P.E.
Public Services Director
(928) 769-2216 Philip.Wisely@Hualapai-nsn.gov

4/3/23 Publish Date

INTRODUCTION/GENERAL PROJECT INFORMATION

This contract will comprise work within the Buck and Doe Road (Indian Route 1) right-of-way including water lines, fire hydrant, bollards and appurtenances. Work within the property line of 1519 Buck and Doe Road is shown for illustrative purposes only and is not in the scope of this bid (see Bid Form).

Prior to start of the work, the successful firm must possess a Tribal Permit, the permit will be obtained from the Game and Fish Department. All sub-contractors and service providers must also possess a Tribal Permit. The successful firm must also complete and submit a Compliance Plan under the Tribe's Tribal Employment Rights Office (TERO) to assure that qualified Tribal members are given opportunities to perform work as employees of the firm or team.

CONTRACTOR QUALIFICATIONS

All Contractors shall be registered with the Arizona Registrar of Contractors. Any changes to these Contractors for the duration of the project shall require Tribal approval. All consultant members shall be considered subcontractors to the prime Contractor.

SCOPE OF WORK:

The Contractor shall construct 700 feet of six inch (6") water main with appurtenances and 125 feet of one and one half inch (1.5") water service line with appurtenances as shown on the construction drawings with estimated quantities on the bid schedule. The accompanying Construction Drawings and Technical Specifications with appendices contains specific information about the scope of work.

PRE-CONSTRUCTION PHASE SERVICES BY THE CONTRACTOR MAY INCLUDE, BUT IS NOT LIMITED TO:

1. Consult with the Tribe's representatives to define and clarify the Tribe's requirements for the project and available data.
2. Provide project planning and scheduling
3. Incorporate the comments and direction provided by the Tribe.
4. Address those requested changes or modifications which would make this project not feasible due to scheduling, budgetary constraints, or due to any conflicts with any rules, regulations, or requirements. Consult with Tribe to revise the Tribe's Criteria as necessary to meet the project budget.
5. Address all Hualapai Tribal permitting requirements and pay all associated fees including TERO tax.
6. Coordinate with various Tribal departments and other agencies, utility companies, etc.

CONSTRUCTION PHASE SERVICES BY THE CONTRACTOR MAY INCLUDE, BUT NOT BE LIMITED TO:

1. Address all Bureau of Indian Affairs and Tribal construction permitting requirements.
2. Arrange for procurement of all materials and equipment required
3. Provide services of an independent third-party special inspector and testing laboratory, as needed
4. Conduct bi-weekly construction progress meetings and schedule and administer specially called meetings throughout the progress of the work.
5. Coordinate with various Tribal departments and other agencies, utility companies, etc.
6. Provide on-site construction management to assure proper compliance with the Contract Documents
7. Schedule and manage site operations
8. Provide quality controls
9. Respond to and resolve Tribal issues
10. Bond and insure the construction in accordance with Tribal regulations (bonding required for bids exceeding \$100,000)

11. Maintain a safe work site for all project participants
12. Provide a minimum of two (2) year warranty

COMPLETION REQUIREMENTS

1. As a condition precedent to final completion, contractor shall secure required certificates of inspection, testing and/or approval and deliver them to the Tribe.
2. As a condition precedent to final completion, Contractor shall collect all equipment manuals and deliver them to the Tribe.
3. Contractor shall perform the checkout of utilities and operations of systems and equipment for readiness, perform their initial start-up and testing, and as a condition precedent to receiving final payment.
4. At the date of Final Completion, and as a condition precedent to receiving final payment, Contractor shall collect all written warranties and deliver them to the Tribe.

SELECTION PROCEDURE

Selection of the Contractor is subject to a determination by the Tribe that the contractor is responsive, qualified, responsible, and eligible to contract for federally funded activities. In determining bidder(s) qualifications, the Tribe may require a meeting at its convenience within seven days of bid opening.

The Bid is subject to Indian Preference. If an Indian-owned firm's price is within 9% of the low bid, the contract will be awarded to that firm. However, proposals by qualified non-Indian firms are strongly encouraged. The Community reserves the right to reject any and all proposals.

***ESTIMATED* SELECTION PROCESS CALENDAR OF EVENTS**

****The calendar of the various activities which make-up the Selection Process is as follows:**

<u>IFB ACTIVITY</u>	DATE	TIME
Advertise Request for Invitation for Bids (IFB)	04/03/23	
Invitation for Bids (IFB) Pre-submittal Conference	04/20/23	2:00 PM
Submittal of Bids	05/03/23	2:00 PM
Evaluation and selection of Contractor (week of)	05/03/23	
Award of Contract (Estimated Date)	05/07/23	
Notice to Proceed and Commence Work	Date of Award + 7 Calendar Days	
Substantial Completion	June 5, 2023	
Final Completion	June 9, 2023	

All questions, whether they are of an administrative, contractual, or technical nature, shall be directed to the attention of **Philip G. Wisely, P.E., Public Services Director, (928) 769-2216, Philip.Wisely@Hualapai-nsn.gov**

TIME OF PERFORMANCE

The contractor must submit final pay application by June 9, 2023, which is estimated to be 30 days after issuance of Notice to Proceed to meet the period of performance set by the CDC.

INSTRUCTIONS TO BIDDERS

1. **PRE-BID CONFERENCE:** The date and time of a pre-submittal conference, if applicable, is indicated on the cover page of this document. **While not mandatory, it is highly recommended that all interested Offerors attend this pre-submittal conference.** The purpose of this conference will be to clarify the contents of this solicitation in order to prevent any misunderstanding of the Tribe's position. Any doubt as to the requirements of this solicitation or any apparent omission or discrepancy should be presented to the Tribe at this conference. The Tribe will then determine the appropriate action necessary, if any, and may issue a written amendment to the solicitation. Oral statements or instructions will not constitute an amendment to this solicitation. Persons with a disability may request a reasonable accommodation by contacting **Philip G. Wisely, (928) 769-2216**. Requests for accommodations must be made forty-eight (48) hours in advance of the event.
2. **SUBMITTAL FORMAT: Original and 2 copies (3 total) of each bid submittal** should be turned in to the Public Services Department, on any required forms and in the format specified in the solicitation. The original copy of the submittal should be clearly labeled "Original". **The sections of the submittal shall be tabbed and clearly identifiable.** The Tribe will not provide any reimbursement for the cost of developing or presenting submittals in response to the selection process. Failure to include any requested information may have a negative impact on the evaluation and/or may result in the rejection of the offeror's submittal.
3. **INQUIRIES:** Any question related to this solicitation shall be directed to the Public Services Director whose name appears on the front side of this document. Questions should be submitted in writing when time permits. The Public Services Director may require any and all questions to be submitted in writing at their sole discretion. Any correspondence related to a solicitation should refer to the appropriate Solicitation number, page and paragraph number. However, the offeror must not place the number on the outside of an envelope containing questions since such an envelope may be identified as a sealed submittal and may not be opened until after the official submittal due time and date. Oral interpretations or clarifications will be without legal effect. Only questions answered by formal written solicitation amendment will be binding.
4. **FAMILIARIZATION OF SCOPE OF WORK:** Before signing a contract, each Offeror shall familiarize itself with the Scope of Work, laws, regulations and other factors affecting performance of work. It shall carefully correlate its observations with requirements of the solicitation and negotiated contract and otherwise satisfy itself as to the expense and difficulties attending the performance of the work. The signing of a Contract will constitute a representation of compliance by the Offeror. There will be no subsequent financial adjustment, other than that provided by the Contract, for lack of such familiarization.
5. **AMENDMENT OF SOLICITATION:** The bidder shall acknowledge receipt of a solicitation amendment by signing and returning the document by the specified due time and date.
6. **CONFIDENTIAL INFORMATION:** If an individual believes that any portion of a submittal, offer, specification, protest, or correspondence contains information that should be withheld, then the Procurement Manager should be so advised in writing. The Tribe shall review all requests for confidentiality and provide a written determination. If the confidential request is denied, such information shall be disclosed as public information, unless the person utilizes the "Protest" provision.
7. **VENDOR APPLICATION:** Prior to the award of a contract, the successful offeror shall have a completed vendor application on file with the Finance Department. Information may be obtained by contacting the Public Services Department at **(928) 769-2216**.
8. **PREPARATION OF SUBMITTAL:**
 - A. **INSTRUCTIONS FOR SUBMITTAL:** All submittals shall include any and all forms provided in this

solicitation package. It is permissible to copy these forms as required. Facsimiles, telegraphic proposals, or mailgrams shall not be considered. The offer form shall be submitted with an original ink signature by the person authorized to sign the submittal. Erasures, interlineations, or other modifications in the submittal shall be initialed in original ink by the authorized person signing the Consultant offer. Periods of time, stated as a number of days, shall be in **consecutive calendar days**. It is the responsibility of all offerors to examine the entire IFB package, to seek clarification of any requirement that may not be clear, and to check all responses for accuracy before sending in a submittal.

1. **BIDDING PROCEDURES**

- A bid is invalid if it has not been deposited at the Hualapai Public Services Office prior to the time and date for receipt of bids indicated or prior to any extension thereof issued to the Bidders via written addenda.
- Bids must be prepared on the **Bid Form** (see attached) with every blank space filled, the signature in longhand. Amounts must be in words as well as in figures. Should differences between words and figures occur, the amount stated in words shall govern. The Form must be executed in either ink or typewritten. Where the Bidder is a corporation, the Bid Form must be signed by the legal name of the corporation followed by the name of state of incorporation, date of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.
- Bids shall be addressed to the Owner, as shown on the Bid Form, and delivered to the Project Manager in an opaque, sealed package.
- Each original and copy of the bid shall contain all elements of the bid including all required attachments in the order listed on the Bid Form.
- Each package shall be marked as "IFB No.01-2023; Do Not Open Until May 3, 2023" and shall bear the name of the Bidder and the name of the project.
- No bid may be modified or withdrawn after the bid opening for a period of 30 days except where the Award of the Contract has been delayed for at least 31 days.

2. **BID GUARANTEE (Not applicable)**

3. **BIDDERS CERTIFICATION OF ELEGIBILITY**

- Each person submitting a bid for any portion of the work contemplated by the bidding documents shall execute an affidavit, in the form provided by the owner (**Bidder's Eligibility**, see attached), to the effect that he or she is eligible to be awarded this contract under federal regulations. Such affidavit shall be attached to the bid.

4. **NON-COLLUSIVE AFFIDAVIT**

- Each person submitting a bid for any portion of the work contemplated by the bidding documents shall execute an affidavit, in the form provided by the Owner (**Non-Collusive Affidavit**, see attached), to the effect that he or she has not colluded with any other person, firm or corporation in regard to any bid submitted. Such affidavit shall be attached to the bid.

5. **QUALIFICATIONS OF CONTRACTORS**

- Bidders shall submit a properly executed Contractor's Qualification Statement, AIA Document A305, in their Bid Package.

6. SUBCONTRACTOR LIST FORM

- The Form (**Subcontractor List**, see attached) shall be submitted with the Bid and shall include the names of all subcontractors and their location by City and State. All other information (street address, telephone number, etc.) may be left blank at the time of Bid.
- Following Bid Opening, the apparent Low Bidder will be required to submit the fully executed Form within two business days of such notification.

7. CONSTRUCTION SCHEDULE

- The bidder shall include a draft construction schedule for the project in the Bid Package, including key elements of construction and stages of completion. The construction schedule will be utilized to negotiate a binding completion date prior to the execution of contract.

8. INDIAN PREFERENCE

- Completion of this bid solicitation is open to all qualified bidders. However, if a bid is received from at least one qualified Indian organization or Indian-owned economic enterprise, and this bid is within nine percent (9%) of the bid of the lowest responsible bidder, the contract will be awarded to the Indian-owned economic enterprise, (provided this bid does not exceed budgeted funds).
- If claiming a 9% Indian Preference in bidding, the Bidder shall include documentation of the ownership and structure of the firm. A sample form appears in at the end of this solicitation. Such documentation shall include the nature and extent of Indian ownership, a complete schedule of participating entities, and a copy of the latest Arizona Corporation Commission filing or equivalent. In addition, the documentation shall include a copy of the registration or membership of the identified owner in a recognized Indian Tribe or Alaskan Native Village. All submitted information shall be complete and verifiable through the applicable State corporation department, the Bureau of Indian Affairs, and/or the enrollment records of the applicable Indian Village, Tribe or Nation.

9. Contractor's License Law

- Contractor shall comply with, and require Subcontractors to comply with State Contractors License Law, and be duly registered and licensed thereunder. Provide photocopy of License attached to Bid Form.

10. SITE VISITATIONS

- Bidders are expected to fully inform themselves of the existing conditions. A registration list will be maintained at the conference to confirm attendance. Bidders may visit the site at other times; however, neither the Owner or the Project Manager will be available to accompany visits outside of the time set forth for the pre-bid conference. Bids submitted by a bidder whose name does not appear on the pre-bid conference registration list will be returned unopened.

11. BID DELIVERY

A sealed opaque package containing the required original and copies shall be delivered to the Hualapai Public Services Department:

Hualapai Public Services Department
P.O. Box 179 (USPS) or
971 Hualapai Way (drop off location, FedEx, UPS, etc.)
Peach Springs, AZ 86434

The bid package shall include a label identifying the bidder and include the following:

IFB No. 01-2023
Potable Water Line to 1519 Buck and Doe Road
(West Water, Phase 1A)
Do Not Open Until May 3, 2023

12. TIME FOR RECEIVING BIDS

- Bids shall be delivered prior to the date and time set for Receipt of Bids in the Calendar of Events, which is 2:00 PM, Arizona Time, May 3, 2023. The exact closing time for bids will be established by the Project Manager.
- Bids received prior to the bid deadline will be securely kept, unopened. The Project Manager will decide when the specified time has arrived and no bid received thereafter will be considered. No responsibility will attach to the Owner or Project Manager for the premature opening of a bid not properly addressed and identified.
- Delivery may be by mail, delivery service or in-person; however, the bid must be received prior to the stated deadline. Faxed or emailed Bids will not be accepted.

13. MODIFICATIONS OF BIDS

- Modifications of bids will be considered if delivered in the appropriate number of originals and copies matching the required bid submittal. Modifications delivered by telefax will not be accepted or considered.
- Modifications must be set over the signature of the Bidder and must clearly identify the original bid submittal and must clearly indicate the purpose and extent of modification.
- Modifications must be received by the Date set for Receipt of Bids (see above).

14. REJECTION OF BIDS

- The Bidder acknowledges the right of the Owner to reject any or all bids, to waive any informality or irregularity in any bid received, or to withhold the award for any reason determined to be in the Owner's best interests. In addition, the Bidder recognizes the right of the Owner to reject a bid if the Bidder failed to furnish required bid security, or to submit the data required by the bidding Documents, or if the bid is incomplete or irregular.

15. WITHDRAWAL OF BIDS

- Prior to the bid opening, bids may be withdrawn upon the Project Manager's receipt of a written request dispatched by the bidder.
- After the bid opening, bids may not be withdrawn for a period of 30 days without the consent of the Owner.

Negligence on the part of the bidder in preparing his or her bid confers no right of withdrawal or modification of his or her bid after such bid has been opened.

16. OPENING OF BIDS

- Bids will be opened at the time and date set forth in the Calendar of Events.
- Bidders registering at the required pre-bid conference will be given directions to the Bid Opening location, which will be the Owner's Administrative Offices in Peach Springs, AZ.
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• Every bid received within the time set for receiving bids shall be opened and publicly read aloud, irrespective of any irregularities therein.
- The Bid Opening shall be public and Bidders, their representatives and other persons properly interested may be present.

17. CONFIRMATION OF BIDS AND AWARD OF CONTRACT

- The contract will be awarded to the responsive and responsible bidder submitting the lowest proposal complying with the conditions of the Invitation to Bid and Instructions to Bidders, provided the bid is reasonable and it is to the interest of the Owner to accept it.
- Selection of the successful bidder is also subject to compliance with applicable federal codes as being responsible and responsive.
- The Owner also reserves the right to reject the bid of any bidder who has previously failed to perform properly, or to complete on time, contracts of a similar nature; who is not in a position to perform the contract, or who has habitually and without just cause neglected the payment of bills or otherwise disregarded obligations to subcontractors, material suppliers, or employees.
- In determining bidder(s) qualifications, the Owner may require a meeting, at the Owner's convenience, within ten (10) business days of the bid opening.
- The bidder to whom the award is made will be notified at the earliest possible date, which is estimated in the Calendar of Events.
- Bidders are hereby notified that a single lump sum contract will be awarded for this work.

18. EXECUTION OF CONTRACT: PERFORMANCE, PAYMENT SECURITY (Bids of \$100.00 more)

- Subsequent to the award of the contract and within seven days after the prescribed forms are presented for signature, the successful bidder shall execute and deliver to the Tribe a standard contract in such number of counterparts as the Tribe may require. Having satisfied all conditions of the award, as set forth elsewhere in these documents, the successful bidder shall, with the approval of the Tribe, present with the contract one of the following:
 - Performance and Payment Bond
 - The bond must be in a penal sum of at least the full amount of the contract as awarded, and secure the faithful

performance of the contract and the payment of all persons, firms or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services, of any nature, employed or used by him or her in performing the work. Such bond shall bear the same date as, or a date subsequent to, the date of the contract.

- On each bond, the rate of premium shall be stated, together with the total amount of the premium charge. The current power of attorney for the person who signs for any surety company shall be attached to such bond. The bond shall be in the form of a **Performance & Payment Bond** (see attached).
- Surety companies executing bonds must either: (1) Appear on the Treasury Department's most current list (Circular 570 as amended) and must be authorized to transact business in the state of Arizona; or, (2) Be approved by the Owner, and licensed to transact insurance in the state of Arizona, or otherwise permitted to transact insurance under stated exceptions in the Insurance Law of the state of Arizona.
- Bidders must submit with bond(s) a Certificate of Authority from the Arizona Dept. of Insurance certifying that the company issuing the bond is licensed to issue such bonds in Arizona.

- Letter of Credit
 - The Contractor shall furnish (1) a Letter of Credit (LOC) for at least twenty-five percent (25%) of the total contract price, and (2) a Completion Assurance Agreement. The LOC shall read as **Irrevocable Letter of Credit** (see attached). The LOC shall be irrevocable and unconditional, and shall be payable to the Owner according to the LOC's provisions and the provisions of the Completion Assurance Agreement. The LOC shall be interpreted and used in conjunction with **Completion Assurance Agreement** (see attached). The LOC shall be on the financial institution's letterhead, and signed by an officer of the institution legally authorized to execute it. The Completion Assurance Agreement shall be signed by the Contractor and the Owner.

- Deposit of Cash or Securities
 - The Contractor shall establish in a bank or other financial institution acceptable to the Tribe an account in the name of the Tribe of not less than twenty percent (20%) of the contract amount. This account shall be in the form of Certificates of Deposit, other interest-bearing accounts, or Tribe-approved negotiable securities. The Contractor shall provide evidence of this account in the form of a letter from said institution to the Tribe agreeing to the terms of the procedure, along with such Certificates of Deposit or deposit acknowledgements as are applicable. This letter shall be on the institution's letterhead, and signed by an officer of the institution legally authorized to execute it. The letter shall read as **Cash Deposit Agreement** (see attached). The account will be administered in accordance with the terms of the letter evidencing it as a **Cash Deposit Agreement** (see attached).

- Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

SPECIAL TERMS AND CONDITIONS

1. INSURANCE REPRESENTATIONS AND REQUIREMENTS:

- 1.1** Without limiting any obligations or liabilities of the Contractor, the Contractor shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies duly licensed by the State of Arizona with an AM Best, Inc. rating of FSC VIII A- or above with policies and forms satisfactory to the Tribe's Grants and Contracts Administrator. Failure to maintain insurance as specified herein may result in termination of this Contract at the Tribe's option.
- 1.2** By requiring insurance herein, the Tribe does not represent that coverage and limits will be adequate to protect the Contractor, his consultants or subcontractors. The Tribe reserves the right to review any and all of the insurance policies and/or endorsements cited in this Contract but the Tribe has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Contract or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Contract.
- 1.3** All coverage and self-insured retention or deductible portions of insurance of Contractor, his consultants, and his subcontractors at any level, except Workers' Compensation insurance and Professional Liability insurance, if applicable, shall name by written endorsement to the fullest extent permitted by law for claims arising out of the performance of the Work included in this Contract, the Tribe and its agents, representatives, officers, directors, officials and employees as Additional Insured as specified under the respective coverage sections of this Contract. In addition, all coverage and self-insured retention or deductible portions of insurance of Contractor shall name by written endorsement to the fullest extent permitted by law for claims arising out of the performance of the Work included in this Contract his consultants and his subcontractors at any level as Additional Insured as specified under the respective coverage sections of this Contract.
- 1.4** All insurance required herein shall be maintained in full force and effect until all Work or services required to be performed under the terms of this Contract is satisfactorily performed, completed and Final Payment has been made by Contractor. All insurance required herein shall be non-cancellable except by sixty (60) day written notice to the Tribe.
- 1.5** Contractor's, consultant's, and Subcontractor's insurance shall be primary insurance with respect to performance of the work included in this Contract and in the protection of the Tribe as Additional Insureds. The policies required by this Contract shall have attached an "Additional Insured Endorsement" form that includes the Tribe as well as its agents, representatives, officers, directors, officials, and employees as insured parties. The forms shall stipulate that the insurance afforded by the policies shall be by primary insurance and that any insurance, self-insured retention, deductibles, or risk retention programs maintained or participated in by the Tribe or its agents, representatives, officers, directors, officials and employees shall be excess and not contributory to insurance required herein.
- 1.6** In the event any insurance policies required to be furnished by Contractor for this Contract are written on a "claims made" basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for five (5) years past completion and acceptance of the Work or services. Such continuing coverage shall be evidenced by submission of annual Certificates of Insurance citing applicable coverage is in force and containing the provisions as required herein for the five-year period. The obligation of the Architect to supply the same coverage is contingent upon the coverage being reasonably available and affordable.

- 1.7** Each policy of Contractor, Contractor’s consultants, and Subcontractors, including Workers’ Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the Tribe and its agents, representatives, officers, directors, officials, and employees for any claims arising out of the work or services of Contractor, consultant, or Subcontractor. Contractor shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.
- 1.8** The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the Tribe. Contractor shall be solely responsible for any such deductible or self-insured retention amount. The Tribe, at its option, may require Contractor to secure payment of such deductible or self-insured retention by a surety bond or irrevocable and unconditional letter of credit.
- 1.9** For any work under this Contract subcontracted in any way, Contractor shall execute written agreement with each consultant or Subcontractor containing the indemnification provisions set forth herein and insurance requirements set forth herein protecting the Tribe and Contractor. Contractor shall be responsible for executing the agreement with consultant or subcontractor and providing the Tribe’s Grants and Contracts Administrator with certificates of insurance verifying the insurance requirements. Subject to the Tribe’s prior written approval, which approval shall not be unreasonably withheld, Contractor may, at Contractor’s option and at Contractor’s sole risk, allow minor subcontractors to deviate from these insurance requirements, for insurance other than professional liability, due to insurance market availability or affordability issues. Issuance of any such prior written approval is at the sole discretion of the Tribe and shall in no way relieve Contractor of any of its responsibilities under this Contract, nor shall it constitute a waiver of any claims or damages otherwise available by law or contract to the Tribe.
- 1.10** Prior to commencing any work or services under this Contract, Contractor shall furnish Contract’s Administrator with certificate(s) of insurance, or formal endorsements as required by this Contract, issued by the insurers of the Contractor, consultants, and Subcontractors as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverage, conditions and limits of coverage specified in this Contract and that such coverage and provisions are in full force and effect. If a certificate of insurance is submitted as verification of coverage, the Tribe will reasonably rely upon the certificate of insurance as evidence of coverage but such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Contract. If any of the policies required herein expire during the life of this Contract, it shall be Contractor’s responsibility to forward renewal certificates containing all insurance provisions required herein within Ten (10) Days after the renewal date. Additionally, certificates of insurance submitted without referencing the Project, the project number, and the contract number will be subject to rejection and returned or discarded. Certificates of insurance shall specifically include the following provisions:

 - a.** The Tribe and its agents, representatives, officers, directors, officials and employees are Additional Insured as follows:
 - (i) Commercial General Liability - Under Insurance Services Office, Inc., (“ISO”) current Form CG 20 10 or equivalent.
 - (ii) Auto Liability - Under current ISO Form CA 20 48 or equivalent.
 - (iii) Excess Liability - Follow Form to underlying insurance.
 - b.** Contractor’s, consultant’s, and Subcontractor’s insurance shall be primary insurance as respects performance of the Work included in this Contract.
 - c.** All policies, including Workers’ Compensation, waive rights of recovery (subrogation) against the Tribe and its agents, representatives, officers, directors, officials and

employees for any claims arising out of work or services performed by Contractor under this Contract.

- d. A 60-day advance notice cancellation provision to be provided to the Tribe's Grants and Contracts Administrator. If ACORD certificate of insurance form is used, the phrases in the cancellation provision "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.
- e. Certificates of Insurance and any notice of cancellation should be addressed as follows:

*The Hualapai Tribe
P.O. Box 179
Peach Springs, AZ 86434*

- 1.11 Contractor, his consultants, and subcontractors shall not fail to comply with the claim reporting provisions of the insurance policies required herein or cause a breach of any insurance policy warranty that would affect the coverage and protection of the Tribe provided by the policy.

1.12 **Required Insurance Coverage**

- 1.12.1 Contractor shall maintain "occurrence" form Commercial General Liability insurance with an unimpaired limit of not less than two million dollars (\$2,000,000.00) for each occurrence. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, property damage, bodily injury, personal injury and advertising injury. Coverage under the policy will be at least as broad as ISO current policy Form CG 00 010 or equivalent thereof, including but not limited to, separation of insured's clause; and shall not contain a sunset provision or commutation clause, nor any provision which would serve to limit third party action over claims. Further, the policy shall include coverage for the hazards commonly referred to as X (explosion), C (collapse), U (underground). The products and completed operations coverage shall extend for ten (10) years past acceptance, cancellation or termination of the Work. Said policy shall contain a severability of interest provision. To the fullest extent allowed by law, for claims arising out of the performance of this Contract, the Tribe and its agents, representatives, directors, officers, officials and employees shall be cited as an Additional Insured under ISO current Commercial General Liability Additional Insured Endorsement Form CG 20 10, or equivalent, which shall read "Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you." If any Excess insurance is utilized to fulfill the requirements of this paragraph, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.
- 1.12.2 Contractor shall maintain his own occurrence based Professional Liability insurance covering negligent errors and omissions arising out of the work or services performed by Contractor, or anyone employed by Contractor, or anyone for whose negligent acts, mistakes, errors and omissions Contractor is legally liable, of one million dollars (\$1,000,000.00) each claim and two million dollars (\$2,000,000.00) all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage shall extend for five (5) years past completion and acceptance of the work or services, and Contractor shall be required to submit certificates of insurance evidencing proper coverage is in effect as required above.
- 1.12.3 Contractor shall ensure and evidence that Architect/Engineer maintains Professional Liability insurance covering errors and omissions arising out of the work or services performed by Architect, or anyone

employed by Architect, or anyone for whose acts, mistakes, errors and omissions Architect is legally liable, with a liability insurance limit of one million dollars (\$1,000,000.00) each claim and two million dollars (\$2,000,000.00) liability limit for all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage shall extend for five (5) years past completion and acceptance of the work or services, and Architect shall be required to submit Certificates of Insurance evidencing proper coverage is in effect as required above. The obligation to keep this coverage in force is contingent upon the coverage being reasonably available. Architect shall require all his sub-consultants or subcontractors to maintain Professional Liability insurance with coverage in amounts appropriate to the portion of the work assigned to each sub-consultant or subcontractor.

- 1.12.4** Contractor, his consultants, and Subcontractors shall maintain Business Automobile Liability insurance with a limit of one million dollars (\$1,000,000) each occurrence on Contractor's owned, hired and non-owned vehicles assigned to or used in the performance of the Contractor's work or services under this Contract. Coverage will be at least as broad as ISO coverage code "1" "any auto" current policy form CA 00 01 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of the performance of this Contract, the Tribe and its agents, representatives, officers, directors, officials and employees shall be cited as Additional Insureds under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this paragraph, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.
- 1.12.5** Contractor, his consultants, and Subcontractors shall maintain Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of work or services under this Contract and shall also maintain Employers Liability Insurance of not less than one million dollars (\$1,000,000.00) for each accident, one million dollars (\$1,000,000.00) disease for each employee and one million dollars (\$1,000,000.00) disease policy limit.
- 1.12.6** Contractor shall be responsible for purchasing and maintaining Builder's Risk and Course of Construction insurance, including flood and earthquake insurance, to protect the Project from perils of physical loss, in an amount equal to the contract value. The insurance shall provide for all costs of replacement for the entire Project at the time of any loss. The insurance shall include as named insureds the Tribe, and its agents, representatives, officers, directors, officials, and employees, the Contractor, the Contractor's consultants and subcontractors and sub subcontractors and shall insure against loss from the perils of fire and all-risk coverage for physical loss or damage due to theft, lightning, vandalism, collapse, malicious mischief, riot, civil commotion, landslide, smoke, sprinkler leak, water damage, windstorm, hail, transit, flood, earthquake, testing, resulting loss arising from defective design, negligent workmanship or defective material during the Work until Final Payment. Contractor shall increase the coverage limits as necessary to reflect changes in the estimated replacement cost. Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by the Tribe.

1.13 Certificates of Insurance

Prior to commencing the Work under this Contract, Contractor shall furnish the Tribe's Grants and Contracts Administrator with certificates of insurance, and formal endorsements as required by this Contract, issued by Contractor's, consultant's, and Subcontractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Contractor may submit a written request to the Tribe to delay the purchase of certain of the policies required herein until Contractor mobilizes at the site. Unless otherwise specified in this Contract, in the event any insurance policy(ies) required by this Contract is(are) written on a "claims made" basis, coverage shall extend for five years past completion and acceptance of Contractor's work or services and as evidenced by annual certificates of insurance. If a policy does expire during the life

of the Contract, a renewal certificate must be sent to the Tribe thirty (30) Days prior to the expiration date. All certificates of insurance required by this Contract shall be identified by Project name. The Tribe reserves the right to request and receive, within ten working days, certified copies of any or all of the above insurance policies and/or endorsements. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Contract or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Contract. Contractor acknowledges that the Tribe's Grants and Contracts Administrator will review all required certificate(s) of insurance with endorsement(s) for verification of compliance with this Contract.

1.14 Cancellation and Expiration Notice

Insurance required herein shall not expire, be canceled, or materially changed without 60 days' prior written notice to the Tribe.

1.15 Failure of Compliance

Should the Contractor fail to provide and maintain in force any and all insurance, or insurance coverage required by this Contract or by law, or should a dispute arise between the Tribe and any insurance company of Contractor over policy coverage or limits of liability as required herein, the Tribe will be entitled to recover from Contractor all amounts payable, as a matter of law, to the Tribe or any other parties, had the required insurance or insurance coverage been in force. Said recovery will include, but is not limited to, interest for the loss of use of such amounts of money, plus all attorneys' fees, costs, and expenses incurred in securing such determination and any other consequential damages arising out of the failure of Contractor or insurance company to comply with the provisions of this Contract, or any policy required hereby, or any other requirements regarding insurance imposed by law. Nothing herein shall limit any damages for which Contractor is responsible as a matter of law.

1.16 Indemnity

To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless the Tribe and its agents, representatives, officers, directors, officials, and employees of any of them from and against all claims, damages, losses and expenses (including but not limited to attorneys' fees, court costs and the cost of appellate proceedings) relating to, arising out of, or alleged to have resulted from either directly or indirectly the negligent acts, errors, mistakes, omissions, work or services of the Contractor, its employees, consultants, agents, or any tier of subcontractors in the performance of this Contract. Contractor's duty to defend, hold harmless and indemnify the Tribe and its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment or destruction of property, including loss of use resulting there from, caused by any negligent acts, errors, mistakes, omissions, work or services in the performance of this Contract including any employee of Contractor or any tier of consultant or subcontractor or any other person for whose acts, errors, mistakes, omissions, work or services the Contractor may be legally liable. The amount and type of insurance coverage requirements set forth herein are separate and independent from the indemnity provisions of this paragraph and will in no way be construed as limiting the scope and magnitude of the indemnity provisions of this paragraph.

2. **AMENDMENTS:** Amendments may be obtained from the Tribe's website at: www.hualapai-nsn.gov. It is the bidder's responsibility to obtain a copy of any amendment relevant to this solicitation. Internet access is available at all public libraries. Any interested offerors without internet access may obtain a copy of this solicitation by calling (928) 769-2216, or a copy may be picked up during regular business hours at the Public Services Department, 941 Hualapai Way, Peach Springs, AZ 86434. The Tribe takes no responsibility for informing recipients of changes to the original solicitation document. Failure to submit signed amendments with the bid response may be grounds for deeming submittal non-responsive.

3. **CONFLICT OF INTEREST:** Sub consultants who design and/or develop specifications for materials for this project will be precluded from contract award for that item if a solicitation is issued for the item.

STANDARD TERMS AND CONDITIONS

1. DEFINITION OF KEY WORDS USED IN THIS SOLICITATION:

Shall, Will, Must: Indicates a mandatory requirement. Failure to meet these mandatory requirements may result in the rejection of submittal as non-responsive.

Should: Indicates something that is recommended but not mandatory. If the offeror fails to provide recommended information, the Tribe may, at its sole option, ask the offeror to provide the information or evaluate the submittal without the information.

May: Indicates something that is not mandatory but permissible.

For purposes of this solicitation, the following definitions shall apply:

- A. Hualapai Tribe** – The Tribe, Peach Springs, Arizona, 941 Hualapai Way, Peach Springs, AZ 86434
- B. Agency or User Department** – Used interchangeably to mean the Tribal department or division responsible for managing the project.
- C. Contractor or Firm** – Used interchangeably in referring to the person, firm or corporation with whom the Tribe has entered into the Contract.
- D. Joint Venture** – Two or more persons or entities combining their property, money, skills, and knowledge to form a distinct legal entity to carry out a single business enterprise for profit, pursuant to a written agreement.
- E. Contract** - The legal agreement executed between the Tribe and the Contractor.
- F. Tribe Project Manager** - The Tribal employee specifically designated as responsible for monitoring and overseeing the performance under this Contract, also referred to as the Tribe’s Designated Contract Representative.
- G. Procurement Manager** - The contracting authority for the Tribe, Peach Springs, AZ.

2. CERTIFICATION: By signature in the offer section of the Bid Offer page, the Contractor certifies:

- A.** The submission of the offer did not involve collusion or other anti-competitive practices.
- B.** The Consultant shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246.
- C.** The Consultant has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer.
- D.** The Consultant submitting the offer hereby certifies that the individual signing the offer is an authorized agent for the Consultant and has the authority to bind the Consultant to the Contract.

3. TERMINATION OF CONTRACT: This contract may be terminated at any time by mutual written consent, or by the Tribe, with or without cause, upon giving thirty (30) days written notice to you. The Tribe at its convenience, by written notice, may terminate this contract, in whole or in part. If this contract is terminated, the Tribe shall be liable only for payment under the payment provisions of this contract for services rendered and accepted material received by the Tribe before the effective date of termination.

The Tribe reserves the right to cancel the whole or any part of this contract due to failure of contractor to carry out any term, promise, or condition of the contract. The Tribe will issue a written ten (10) day notice of default to contractor for acting or

failing to act as in any of the following:

- A. In the opinion of the Tribe, contractor provides personnel that do not meet the requirements of the contract;
- B. In the opinion of the Tribe, contractor fails to perform adequately the stipulations, conditions or services/specifications required in this contract;
- C. In the opinion of the Tribe, contractor attempts to impose on the Tribe personnel or materials, products or workmanship, which is of an unacceptable quality.
- D. Contractor fails to furnish the required service and/or product within the time stipulated in the contract;
- E. In the opinion of the Tribe, contractor fails to make progress in the performance of the requirements of the contract and/or give the Tribe a positive indication that contractor will not or cannot perform to the requirements of the contract.

Each payment obligation of the Tribe created hereby is conditioned upon the availability of Tribal, State and Federal funds which are appropriated or allocated for the payment of such an obligation. If funds are not allocated by the Tribe and available for the continuance of service herein contemplated, the contract period for the service may be terminated by the Tribe at the end of the period for which funds are available. The Tribe shall notify contractor at the earliest possible time which service will or may be affected by a shortage of funds. No penalty shall accrue to the Tribe in the event this provision is exercised, and the Tribe shall not be obligated or liable for any future payments due or for any damages as a result of termination under this paragraph.

- 4. **RECORDS:** Internal control over all financial transactions related to this contract shall be in accordance with sound fiscal policies. The Tribe may, at reasonable times and places, audit the books and records of you or any and all of your subcontractors. Said audit shall be limited to this contract and its scope of services.
- 5. **INDEPENDENT CONTRACTOR:** It is clearly understood that each party shall act in its individual capacity and not as an agent, employee, partner, joint venture, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other party for any purpose whatsoever.

Contractor shall not be entitled to compensation in the form of salaries, or to paid vacation or sick days by the Tribe, and that such days do not accumulate for the use of same at a later date.

The Tribe will not provide any insurance coverage to the Contractor, including Workmen's Compensation coverage. The Contractor is advised that taxes or social security payments shall not be withheld from a Tribe payment issued hereunder and that Contractor should make arrangements to directly pay such expenses, if any.

- 6. **INDIAN PREFERENCE:** The Contractor and each of its subcontractors shall give preference in all hiring to Indians as required by the Indian preference in accordance with 25 U.S.C. § 450e(b). Except as set forth in 25 U.S.C. § 450e(b), Contractor, its subcontractor(s) and supplier(s) agree to adhere to a policy of equal employment opportunity and demonstrate an affirmative effort to recruit, hire, promote and upgrade the position of employees regardless of race, color, religion, ancestry, sex, age, disability, national origin, sexual orientation, gender identity, familial status, or marital status and who agree and are responsive to the Tribe's goals.
- 7. **HUMAN RELATIONS:** Contractor agrees to abide by the provisions of the Tribe's Procurement Code relating to provisions against discrimination required in all Tribe contracts.

8. **NON-EXCLUSIVE CONTRACT:** Any contract resulting from this solicitation shall be awarded with the understanding and agreement that it is for the sole convenience of the Tribe. The Tribe reserves the right to obtain like goods or services from another source when necessary.
9. **AMERICANS WITH DISABILITIES ACT:** Except as set forth in 42 U.S.C. § 2000e-2(i), this Contract is subject to all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and applicable federal regulations under the Act.
10. **CONFIDENTIALITY OF RECORDS:** The Contractor shall establish and maintain procedures and controls that are acceptable to the Tribe for the purpose of assuring that no information contained in its records or obtained from the Tribe or from others in carrying out its functions under the contract shall be used by or disclosed by it, its agents, officers, or employees, except as required to efficiently perform duties under the contract. Persons requesting such information should be referred to the Tribe. Contractor also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of contractor as needed for the performance of duties under the contract, unless otherwise agreed to in writing by the Tribe.
11. **SHIPMENT UNDER RESERVATION PROHIBITED:** Contractor is not authorized to ship materials under reservation and no tender of a bill of lading shall operate as a tender of the materials. Non-compliance shall conform to the cancellation clause set forth within this document.
12. **GRATUITIES:** The Tribe may, by written notice to the Contractor, cancel this contract if it is found that gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the contractor or any agent or representative of the Contractor, to any officer or employee of the Tribe amending, or the making of any determinations with respect to the performing of such contract. In the event this contract is canceled by the Tribe pursuant to this provision, the Tribe shall be entitled, in addition to any other rights and remedies, to recover or withhold from the Contractor the amount of the gratuity.
13. **APPLICABLE LAW:** This contract shall be governed by the laws of the Hualapai Tribe.
14. **CONTRACT:** The contract shall be based upon the Invitation for Bids issued by the Tribe and the offer submitted by the Contractor in response to the Invitation for Bids. The offer shall substantially conform to the terms, conditions, specifications and other requirements set forth within the text of the Invitation for Bids. The Tribe reserves the right to clarify any contractual terms with the concurrence of the Contractor; however, any substantial non-conformity in the offer, as determined by the Tribe's Procurement Manager, shall be deemed non-responsive and the offer rejected. The contract shall contain the entire agreement between the Tribe and the Contractor relating to this requirement and shall prevail over any and all previous agreements, contracts, proposals, negotiations, purchase orders, or master agreements in any form.
15. **DISPUTE RESOLUTION:** All claims and controversies arising under this contract shall be resolved in the Hualapai Tribal Court.
16. **CONTRACT AMENDMENTS:** This contract shall be modified only by a written contract amendment signed by persons duly authorized to enter into contracts on behalf of the Contractor and the Tribe.
17. **PROVISIONS REQUIRED BY LAW:** Each and every provision of law and any clause required by law to be in the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.
18. **SEVERABILITY:** The provisions of this contract are severable to the extent that any provision or application held to be invalid shall not affect any other provision or application of the contract which may remain in effect without the valid provision or application.

19. **PROTECTION OF TRIBAL BUILDINGS:** The Contractor shall use reasonable care to avoid damaging existing buildings, equipment, and vegetation (such as trees, shrubs, and grass) on Tribal property. If the Contractor fails to do so and damages such buildings, equipment and vegetation, the Contractor shall replace or repair the damage at no expense to the Tribe, as directed by the Procurement Manager. If the Contractor fails or refuses to make such repair or replacement, then the Contractor shall be liable for the cost thereof, which may be deducted from the contract price.
20. **INTERPRETATION - PAROL EVIDENCE:** This contract is intended by the parties as a final expression of their agreement and is intended also as a complete and exclusive statement of the terms of this agreement. No course of prior dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term used in this contract. Acceptance or acquiescence in a course of performance rendered under this contract shall not be relevant to determine the meaning of this contract even though the accepting or acquiescing party has knowledge of the nature of the performance and opportunity to object.
21. **ASSIGNMENT - DELEGATION:** No right or interest in this contract shall be assigned by the contractor without prior written permission of the Tribe, and no delegation of any duty of Contractor shall be made without prior written permission of the Tribe's Procurement Manager. The Tribe shall not unreasonably withhold approval and shall notify the Contractor of the Tribe's position within fifteen (15) days of receipt of written notice by the Contractor.
22. **SUBCONTRACTS:** No subcontract shall be entered into by the Contractor with any other party to furnish any of the material/service specified herein without the advance written approval of the Tribe's Procurement Manager. All subcontracts shall comply with Federal and State laws and regulations which are applicable to the services covered by the subcontract and shall include all the terms and conditions set forth herein which shall apply with equal force to the subcontract, as if the subcontractor were the Contractor referred to herein. The Contractor is responsible for contract performance whether or not subcontractors are used. The Tribe shall not unreasonably withhold approval and shall notify the Contractor of the Tribe's position within fifteen (15) days of receipt of written notice by the Contractor.
23. **RIGHTS AND REMEDIES:** No provision in this document or in the Contractor's proposal shall be construed, expressly or by implication as a waiver by either party of any existing or future right and/or remedy available by law in the event of any claim or default or breach of contract. The failure of either party to insist upon the strict performance of any term or condition of the contract or to exercise or delay the exercise of any right or remedy provided in the contract, or by law, or the acceptance of materials or services, obligations imposed by this contract or by law, and shall not be deemed a waiver of any right of either party to insist upon the strict performance of the contract.
24. **WARRANTIES:** Contractor warrants that all material or service delivered under this contract shall conform to the specifications of this contract. Mere receipt of shipment of the material or service specified and any inspection incidental thereto by the Tribe, shall not alter or affect the obligations of the Contractor or the rights of the Tribe under the foregoing warranties. Additional warranty requirements may be set forth in this document.
25. **INDEMNIFICATION:** To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless the Tribe, its Council members, officers, employees, agents and other officials (hereafter called "Tribe") from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, court costs or other alternative dispute resolution costs arising out of or resulting from Contractor's work or services; provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, death, personal injury, or property damage, including the loss of use or diminution in value, resulting there from; but only to the extent caused in whole or in part by the actual or alleged negligent acts, errors or omissions of Contractor, or anyone for whose acts Contractor may be liable. Contractor shall not be obligated to indemnify, defend and hold harmless the Tribe for any claims to the extent that the injury or damage is attributable to or arose from the negligence or willful misconduct on the part of the Tribe, its agents or employees. The Tribe reserves the right, but not the obligation, to participate in defense without relieving the Contractor of any obligation hereunder. The amount and type of insurance coverage requirements set forth in this contract shall in no way be construed as limiting the scope of the indemnity in this paragraph. The provisions of this Section shall survive the expiration or early termination of this Contract.

26. **OVERCHARGES BY ANTITRUST VIOLATIONS:** The Tribe maintains that, in actual practice, overcharges resulting from antitrust violations are borne by the purchaser. Therefore, to the extent permitted by law, the Contractor hereby assigns to the Tribe any and all claims for such overcharges as to the materials or services used to fulfill the contract.
27. **RIGHT TO ASSURANCE:** Whenever one party to this contract in good faith has reason to question the other party's intent to perform, the former party may demand that the other party give a written assurance of this intent to perform. In the event that a demand is made and no written assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation with this contract.
28. **ADVERTISING:** Contractor shall not advertise or publish information concerning this contract without prior written consent of the Tribe.
29. **RIGHT TO INSPECT:** The Tribe may, at reasonable times, and at the Tribe's expense, inspect the place of a Contractor or subcontractor which is related to the performance of any contract as awarded or to be awarded.
30. **FORCE MAJEURE:**
 - A. Except for payment of sums due, neither party shall be liable to the other nor deemed in default under this contract if and to the extent that such party's performance of this contract is prevented by reason of Force Majeure. The term "Force Majeure" means an occurrence that is beyond the control of the party affected and occurs without its fault or negligence. Force Majeure shall not include late performance by a subcontractor unless the delay arises out of a Force Majeure occurrence in accordance with this Force Majeure term and condition.
 - B. If either party is delayed at any time in the progress of the work by Force Majeure, the delayed party shall notify the other party in writing of such delay, as soon as is practical, of the commencement thereof and shall specify the causes of such delay in such notice. Such notice shall be hand-delivered or mailed certified-return receipt and shall make a specific reference to this article, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing when it has done so. The time of completion shall be extended by contract modification for a period of time equal to the time that results or effects of such delay prevent the delayed party from performing in accordance with this contract.
31. **INSPECTION:** All material or service is subject to final inspection and acceptance by the Tribe. Material or service failing to conform to the specifications of this contract shall be held at Contractor's risk and may be returned to the Contractor. If so returned, all costs are the responsibility of the Contractor. Noncompliance shall conform to the cancellation clause set forth in this document.
32. **EXCLUSIVE POSSESSION:** All services, information, computer program elements, reports, and other deliverables which may be created under this contract are the sole property of the Tribe and shall not be used or released by the Contractor or any other person except with prior written permission by the Tribe.
33. **TITLE AND RISK OF LOSS:** The title and risk of loss of material or service shall not pass to the Tribe until the Tribe actually receives the material or service at the point of delivery, unless otherwise provided within this contract.
34. **NO REPLACEMENT OF DEFECTIVE TENDER:** Every tender of materials must fully comply with all provisions of this contract. If a tender is made which does not fully conform, this shall conform to the cancellation clause set forth within this document.
35. **DEFAULT IN ONE INSTALLMENT TO CONSTITUTE TOTAL BREACH:** Contractor shall deliver conforming materials in each installment or lot of this contract and may not substitute nonconforming materials. Delivery of nonconforming materials or a default of any nature, at the option of the Tribe, shall constitute breach of the contract as a whole.

Noncompliance shall conform to the cancellation clause set forth within this document.

36. **LIENS:** All materials, services, and other deliverables supplied to the Tribe under this contract shall be free of all liens other than the security interest held by the Contractor until payment in full is made by the Tribe. Upon request of the Tribe, the Contractor shall provide a formal release of all liens.
37. **PAYMENT:** A separate invoice shall be issued for each shipment of material or service performed, and no payment shall be issued prior to receipt of material or service and correct invoice. The Tribe shall make every effort to process payment for the purchase of materials or services within thirty (30) calendar days after receipt of materials or services and a correct invoice.
38. **LICENSES:** Contractor shall maintain in current status all Federal, State, and local licenses and permits required for the operation of the business conducted by the Contractor as applicable to this contract.
39. **COST OF PROPOSAL PREPARATION:** The Tribe shall not reimburse the cost of developing, presenting, or providing any response to this solicitation. Offers submitted for consideration should be prepared simply and economically providing adequate information in a straightforward and concise manner.
40. **PUBLIC RECORD:** All proposals submitted in response to this request shall become the property of the Tribe and shall become a matter of public record available for review subsequent to the award notification.
41. **SUBSEQUENT EMPLOYMENT:** The Tribe may cancel this contract without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting, or creating the contract, on behalf of the Tribe is or becomes, at any time while the contract or any extension of the contract is in effect, an employee of, or a contractor to any other party to this contract with respect to the subject matter of the contract. Such cancellation shall be effective when written notice from the Procurement Manager is received by the parties to this contract, unless the notice specifies a later time.
42. **CLEAN UP:** The Contractor shall at all times keep the contract area, including storage areas used by the Contractor, free from accumulation of waste material or rubbish and, prior to completion of the work, remove any rubbish from the premises and all tools, scaffolding, equipment and materials not property of the Tribe. Upon completion of the repair, the Contractor shall leave the work and premises in clean, neat and workmanlike condition.
43. **PROJECT COMPLIANCE:** At a minimum, the project shall be designed to comply with all applicable Federal, State and Local regulations and any amendments thereto which are adopted during the life of this Contract.
44. **TERRORISM COUNTRY DIVESTMENTS:** The successful Contractor shall at no time during the term of the contract be in violation of the U.S. Export Administration Act.
45. **INDIAN PREFERENCE:** The Contractor and each of its subcontractors shall give preference in all hiring to Indians as required by the Indian preference in accordance with 25 U.S.C. § 450e(b).
46. **TERO:** The Contractor and each of its subcontractors agree to comply with its obligations under the Tribe's TERO Ordinance. The dollar value of all contracts is subject to a one percent TERO tax payable to the Tribe prior to commencement of work.

BID OFFER PAGE

TO THE HUALAPAI TRIBE:

The Undersigned hereby offers and agrees to enter into negotiations with the Tribe to provide the material or service in compliance with all terms, scope of work, conditions, specifications, and amendments in the solicitation.

For clarification of this offer, please contact:

Company Name

Name: _____

Address

Phone: _____

City State Zip

Fax: _____

Signature of Person Authorized to Sign

Printed Name

Title

ACCEPTANCE OF BID OFFER:

The offer is hereby accepted.

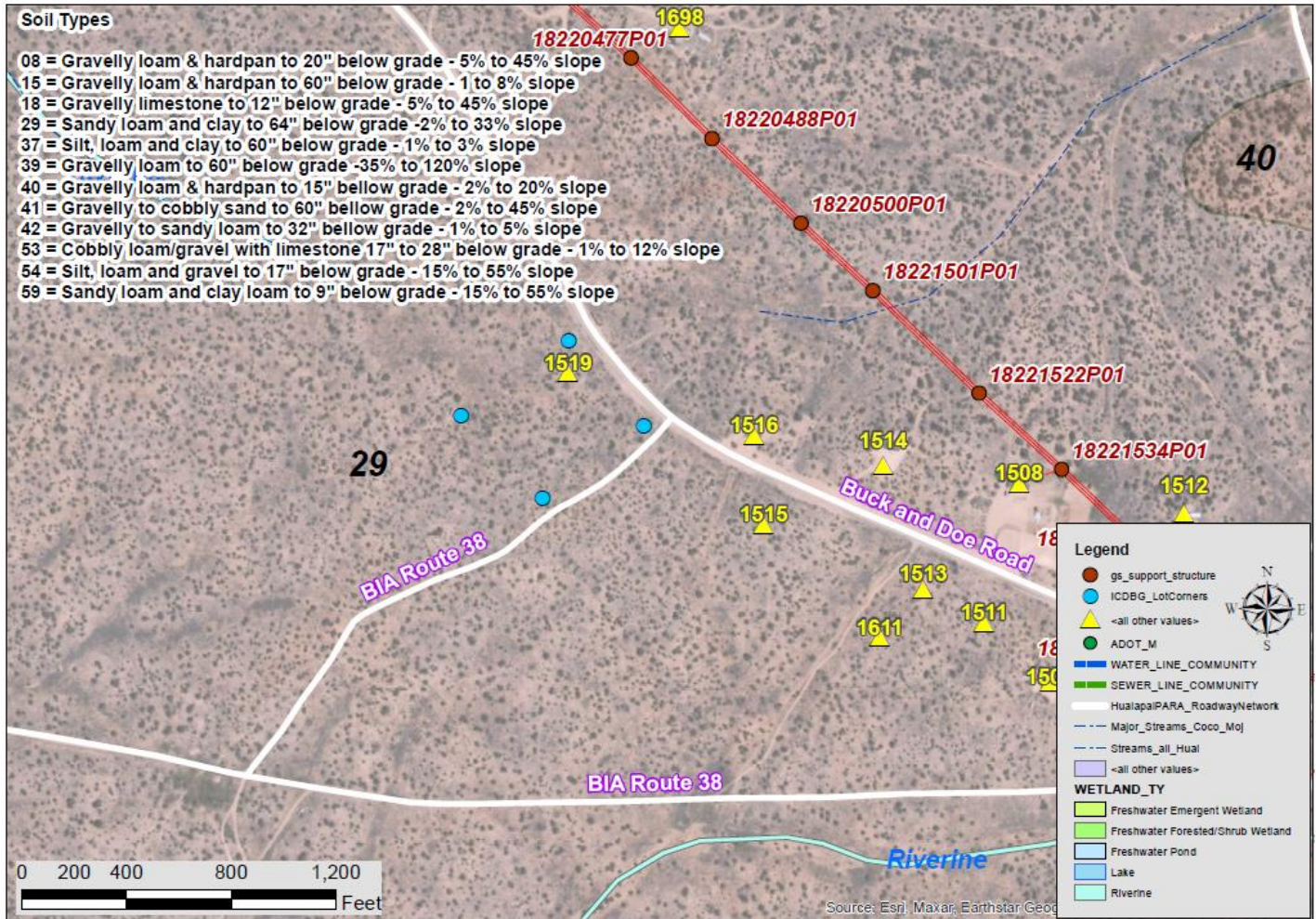
The Consultant is now bound to provide the materials or services listed in IFB #01-2023, including all terms, conditions, specifications, amendments, etc., and the Contractor's Bid Offer as accepted by Tribe/public entity.

The Consultant has been cautioned not to commence any billable work or to provide any material or service under this contract until Consultant receives this signed sheet, or written notice to proceed.

Awarded this ___ day of _____ 20___

Authorized signature / Chairwoman of the Hualapai Indian Tribe

Buck and Doe Road Vicinity Map



Drawn by: Kevin Davidson, 3/6/2023

Photos of existing hydrant and northerly shoulder along Buck and Doe Road



Bid Form

**POTABLE WATER LINE TO 1519 BUCK AND DOE ROAD
WEST WATER, PHASE 1A**

Item No	Item Name	Units	Quantity	Unit Price	Extended Price
1	MOBILIZATION	LS	1		
2	CONSTRUCTION STORMWATER MANAGEMENT	LS	1		
3	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	LS	1		
4	MATERIALS TESTING AND SURVEY	LS	1		
5	EXPLORATORY TIME	HR	4		
6	CONNECT TO EXISTING WATER MAIN	EA	1		
7	INSTALL 6" C900 DR 18 PVC WATER MAIN	LF	700		
8	INSTALL 6" MJ GATE VALVE AND BOX	EA	2		
9	INSTALL 6" MJ CAP	EA	1		
10	INSTALL FLUSHING HYDRANT ASSEMBLY (HYDRANT, TEE, VALVE, VALVE BOX)	EA	1		
11	INSTALL 1.5" WATER SERVICE TAP	LS	1		
12	INSTALL 1.5" WATER SERVICE LINE BORE UNDER ROAD	LF	50		
13	INSTALL 1.5" WATER SERVICE LINE	LF	63		
14	INSTALL 3/4" WATER SERVICE LINE	LF	10 ¹		
15	INSTALL 3/4" CURB STOP AND BOX	LS	1		
16	INSTALL METER PIT ASSEMBLY	LS	1		
17	INSTALL BOLLARDS	EA	4		
18	INSTALL CARSONITE UTILITY LINE MARKERS	EA	4		
19	SEEDING AND RECLAMATION	LS	1		
TOTAL BID					

TOTAL BID WRITTEN IN WORDS: _____

¹ Manufactured home set-up contractor will connect to the back side of the meter with 3/4" pipe and connect to building

We, the undersigned, propose to do all the work and furnish all the labor, physical plant and materials necessary for the potable water line to 1519 Buck and Doe Road. We further declare that we have carefully read Invitation for Bid that we have made a personal examination of the site that we understand the exact Scope of the Project, and by making the Bid, declare that we are in compliance with all requirements thereof. We acknowledge receipt of the following Addenda and have included their provisions in this Bid.

Addendum No. _____ Dated _____ Addendum No. _____ Dated _____

In submitting this Bid, We agree:

1. To hold the Bid open until 30 days after date for receipt of bids.
2. To enter into and execute a Contract, and to furnish Performance and Payment Bonds and Insurance Certificates in accordance with the Contract Documents, within 24 hours after notice of award of contract.
3. To accomplish the work in accordance with the Contract Documents.
4. To provide substantial completion of the work by the date stated in the Calendar of Events and that failure to meet this provision will result in Owner applying provisions of liquidated damages of \$250 per day.

Rights: In submitting this bid, it is understood that the right is reserved by the Tribe to reject any and all bids. If written notice of the acceptance bid is mailed, telegraphed or delivered to the undersigned within thirty days after the opening thereof, or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish the required performance and payment security within ten (10) days after the contract is presented to him for a signature.

Bid Bond: Bid security in the sum of _____ dollars (\$_____) in the form of _____ is submitted herewith in accordance with the Invitation for Bids.

Non-Collusion: Attached hereto is an affidavit in proof that the undersigned has not colluded with any person with respect to the proposal.

Required Attachments: We have enclosed the following required items:

- 1) Bidder's Certification of Eligibility, 2) Non-Collusive Affidavit, 3) Contractors Qualifications, 4) Subcontractor List Form, 5) Evidence of Performance & Payment Bond (bids over \$100,000), 6) Preliminary Construction Schedule, 7) Indian Preference Documentation (if applicable; Form 01095 is optional), 8) Copy of Contractor's License(s)

Date _____

Contractor _____

By _____, Title _____

Address _____, Telephone _____

Surety _____, AZ License No. _____

(Seal if Corporation)

BIDDER'S CERTIFICATION OF ELIGIBILITY

By the submittal of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person of firm that has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

- (1) Be awarded contracts by any agency of the United States Government
- Or,
- (2) Participate in federal programs.

Name of Bidder

Address

By: _____

Title: _____

NOTE: This certification is a material representation of fact upon which reliance is placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in Federal programs.

AFFIDAVIT

State of _____

County of _____

_____, being first duly sworn, deposes and says:

That he/she is, _____ the party making the foregoing proposal for bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person to fix the bid price of affiant or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Owner or any person interested in the proposed contract, and that all statements in said proposal for bid are true.

Invitation for Bid No. 01-2023

Location Peach Springs, Arizona

Signature

Name and Title

Date
(Signature should be notarized.)

Performance and Payment Bond²

KNOW ALL MEN BY THESE PRESENTS: THAT we, _____, as PRINCIPAL, and _____ as SURETY, are held firmly bound unto _____ hereinafter called the Owner, in the penal sum of _____ (\$ _____), for the payment of which sum we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally.

WHEREAS, Principal has entered into a certain Contract with the Owner, dated _____, a copy of which is hereto attached and made a part hereof.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all respects fully perform the Contract and all duly authorized modifications thereof during its original term and any extensions thereof that may be granted and during any guaranty period for which the Contract provides, and if the Principal shall fully satisfy all claims arising out of the prosecution of the work under the Contract and shall fully indemnify the Owner for all expenses which it may incur by reason of such claims, including its attorney's fees and court costs, and if the Principal shall make full payment to all persons supplying labor, services, materials, or equipment in the prosecution of the work under the Contract, in default of which such persons shall have a direct right of action hereupon; and if the Principal shall pay or cause to be paid all sales and use taxes payable as a result of the performance of the Contract as well as payment of gasoline and special motor fuel taxes in the performance of the Contract and all motor vehicle fees required for commercial motor vehicles used in connection with the performance of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect. No modification of the Contract or extension of the term thereof, nor any forbearance on the part of the Owner shall in any way release the Principal or the Surety from liability hereunder. Notice to the Surety of any such modification, extension, or forbearance is hereby waived.

IN WITNESS WHEREOF, the aforesaid Principal and Surety have executed this instrument and affixed their seals hereto, this _____ day of _____.

Principal Surety

Name and Title

(signatures must be notarized.)

(Power-of -Attorney for person signing for Surety Company must be attached to bond.)

The rate of premium on this bond is \$ _____ per thousand.

The total amount of premium charge \$ _____.

(The above is to be filled in by Surety Company.)

² Bids exceeding \$100,000 must provide bonding per Hualapai Procurement Procedures and Purchasing Manual, IV.C

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____ Secretary of the corporation named as Principal in the foregoing bond; that _____ who signed the bond on behalf of the Principal, was then _____ of said corporation; that I know his/her signature thereto is genuine; and that said bond was fully signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

DIRECTIONS FOR PREPARATION OF PERFORMANCE AND PAYMENT BOND

1. Individual sureties, partnerships or corporations not in the surety business are not acceptable.
2. The name of the Principal shall be shown exactly as it appears in the Contract.
3. The penal sum shall not be less than required by the Contract.
4. If the principals are partners or joint ventures, each member shall execute the bond as an individual and state his/her place of residence.
5. The official character and authority of the person(s) executing the bond for the Principal, if a corporation shall be certified by the Secretary of Assistant Secretary thereof under the corporate seal, or copies attached to such records of the corporation as will evidence the official character and authority of the officer signing, duly certified by the Secretary of Assistant Secretary, under the corporate seal, to be true copies.
6. The current power-of-attorney of the person signing for the surety company must be attached to the bond.
7. The date of the bond must not be prior to the date of the contract.
8. The following information must be placed on the bond by the surety company:
 - A. The rate of premium in dollars per thousand; and
 - B. The total dollar amount of premium charged.
9. Type or print the name underneath each signature appearing on the bond.
10. An executed copy of the bond must be attached to each copy of the Contract (original counterpart) intended for signing.

(On Bank letterhead)
IRREVOCABLE LETTER OF CREDIT

(Address to Owner)

Dear _____:

We hereby authorize you to draw on us to the aggregate amount of \$_____ in the event (name of contractor) defaults, or fails to complete construction and/or payments under that certain Construction Contract with you dated _____.

Such drafts must be accompanied by:

1. Completion Assurance Agreement dated _____ for the project known as Project Number _____.
2. Written certification by you that the proceeds of any draft drawn on this Letter of Credit will be used solely for the purposes and interests described in the Completion Assurance Agreement.

We warrant you that all drafts drawn in compliance with the terms of this Letter of Credit will be duly honored upon delivery of documentation specified and presented to this office until _____ or until fifteen months after the date of substantial completion of the Construction Contract dated between _____, the contractor, and _____, the Owner, as the said date of substantial completion is defined in said Construction Contract, whichever first occurs.

This Letter is irrevocable and shall be in full force and effect unless notification in writing is received by you canceling same.

This credit shall not be modified or amended except upon the written agreement of this Bank and the Owner.

Sincerely,

President

(cc: Contractor)

Completion Assurance Agreement

THIS AGREEMENT made this _____ day of _____ by and between the Hualapai Indian Tribe (Owner) and _____ (Contractor).

WITNESSETH

WHEREAS, the Contractor and the Owner have entered into a Construction Contract dated _____, providing for the construction of a project described in such Contract; and

WHEREAS, the Contractor desires to meet his obligations to supply 100 percent Performance and Payment Bonds with a substitution of another form of security; and

WHEREAS, the Owner has determined that a Letter of Credit arrangement would provide sufficient security in lieu of a performance and payment bond.

NOW THEREFORE, in consideration of the mutual promises and undertakings herein contained, and for the purpose of inducing the Owner to substitute a Letter of Credit arrangement for a Performance and Payment Bond, the parties hereto agree that:

1. The Contractor has provided the Owner with an unconditional, irrevocable, Letter of Credit (Fund), issued by a banking institution in the amount of \$ _____ to secure and indemnify the Owner for any expense, loss or damage suffered or sustained as a result of any default by the Contractor in the performance of its obligations under the Construction Contract. It is expressly understood and agreed that said Fund shall at all times be under the control of the Owner.
2. All disbursements from the Fund shall be authorized and made by the Owner.
3. The Fund shall be maintained as a separate trust account and may be drawn in increments up to its aggregate amount or the aggregate may be drawn. Any incremental draw will not impair or diminish the right of the Owner to make subsequent draws in any amount(s) up to the aggregate amount of the Fund. The proceeds of a draw may be disbursed as follows:
 - A. To the Contractor during the course of construction to promote the completion of the project, as may be deemed necessary by the Owner.
 - B. To the Owner the entire fund or balance remaining therein in the event of a default by the Contractor under the Construction Contract to be used by the Owner to indemnify it for any loss, damage or expense whatsoever which it may suffer by reason of the Contractor's failure to perform the Construction Contract.
 - C. To the Contractor the balance of such fund remaining after three months from the date that the work has been substantially completed in accordance with the Construction Contract (except for punch list items and items awaiting seasonal opportunity to complete) and accepted by the Contracting Officer, but only so long as the Project is free and clear of any liens, claims or encumbrances whatsoever. There shall be withheld from the payment of said balance an amount equal to 2½ percent of the total amount of the Construction Contract, which sum is to be retained in account for a period of fifteen months from the date of substantial completion or for

another period less than fifteen months if authorized by the Owner. Said sum shall be held as a Fund to guarantee against defects in construction due to faulty materials or workmanship or damage to the premises resulting from such defects, which defects or damage become apparent within one year from the date of substantial completion. Said sum may be used for the correction of defects or damage in the event the Contractor fails to make such corrections. The Contractor's liability for such corrections is not limited by the amount of such sum.

4. It is agreed the Contractor may provide a separate unconditional and irrevocable Letter of Credit to satisfy the requirement set forth in paragraph 3C above, that 2½ percent of the total Construction Contract amount, for latent defects, to be retained for fifteen months beyond the date of substantial completion. If such separate unconditional and irrevocable Letter of Credit is provided, it must be delivered to the Owner and made subject to this Completion Assurance Agreement before any balance remaining in the Fund is released to the Contractor or the Fund is canceled.

5. Any other provision of this Agreement notwithstanding, it is understood and agreed that no funds may be disbursed to the Contractor so long as there are any outstanding liens, claims or encumbrances against the project, written notice of which have been received by the Owner. If any such claims, liens and encumbrances have not been removed or resolved, and written notice of such removal or resolution received by the Owner by the date of substantial completion, the Owner may in its sole discretion exercise any of its rights under the Construction Contract General Conditions.

6. It is expressly understood by all parties hereto that in the event of a default by Contractor in any of its obligations under the Construction Contract, the entire Fund, any part thereof, or balance remaining therein may, at the option of the Owner, be paid to Owner together with an assignment of all rights granted to the Owner.

7. This agreement shall not alter or limit the obligations and liabilities of the Contractor under the Construction Contract, but shall be deemed to be additional security for the performance by the Contractor of its obligations thereunder.

8. It is understood and agreed in the event the fund is held by a depository, that the depository is not charged with any duty or responsibility to see to the performance of or compliance with any agreements between any of the parties hereto other than that of paying over the fund as directed in writing by the Owner, nor to see to the application of the Fund after making disbursements as so directed. It is expressly understood and agreed that any claim, controversy, dispute or disagreement which may exist between the Contractor and the owner shall have no effect whatsoever upon the obligation of the Depository to pay the Owner promptly upon receipt of a notice issued pursuant to the terms of the Fund and this Agreement.

9. Notwithstanding any other provision of the Construction Contract, it is agreed the fund will be administered pursuant to the terms of the Fund, this Agreement and any consistent provisions in the Construction Contract. Any inconsistent provisions in the Construction Contract shall be superseded and controlled by the Fund and this Agreement. It is expressly agreed that reference to this Agreement or collateral Construction Contract document does not make the issuance of the Fund conditional.

Contractor

Name and Title

Owner

Name and Title

Approved by Bank:

Name and Title

(Bank Letterhead)
CASH DEPOSIT LETTER

(Address to Owner)

Dear _____:

This will acknowledge that this Bank has established an account in the amount of \$_____ with funds received from _____.

This account has been issued in the name of _____ and the original certificate manifesting the same is being handed to you herewith. It is our understanding that this account is being established in lieu of performance and payment bonds customarily furnished in construction projects. The account shall serve as the "Fund" referred to in the Completion Assurance Agreement, dated _____, by and between the Owner and the Contractor.

The Bank shall pay over all or part of the funds in the account together with interest herein to the Owner, or to another as the Owner may designate, upon written notification by the Owner to the Bank of a default by the Contractor under the Construction Contract, or of the Contractor's failure to perform the Construction Contract.

The Bank shall pay over all or part of the funds in the account upon proper notification by the Owner without regard to any objections, claims, defenses, assertions, or actions by the Contractor or any other person or entity acting on behalf of the Contractor. The Bank specifically recognizes that any controversy, dispute, claim or disagreement which may exist between the Contractor and the Owner have no effect whatsoever upon the obligation of the Bank to pay the Owner promptly upon receipt of the notice referred to above.

Sincerely,

President

Cash Deposit Agreement

THIS AGREEMENT made this ____ day of _____ by and between the Hualapai Indian Tribe (Owner) and _____ (Contractor).

WITNESSETH

WHEREAS, the Contractor and the Owner have entered into a Construction Contract dated _____, providing for the construction of a project described in such Contract; and

WHEREAS, the Contractor desires to meet his/her obligations to supply 100 percent Performance and Payment Bonds with a substitution of another form of security; and

WHEREAS, the Owner has determined that a cash deposit arrangement would provide sufficient security in lieu of a Performance and Payment Bond.

NOW THEREFORE, in consideration of the mutual promises and undertakings herein contained, and for the purpose of inducing the Owner to substitute a cash deposit arrangement for a Performance and Payment Bond, the parties hereto agree that:

1. The Contractor has provided the Owner with a letter dated _____, from a banking institution evidencing the deposit of funds in an account (Fund) in the amount of \$ _____. The Fund has been established in the name of the Owner to secure and indemnify it for any expense, loss or damage suffered or sustained as a result of any default by the Contractor in the performance of its obligations under the Construction Contract. It is expressly understood and agreed that said Fund shall at all times be under the control of the Owner.
2. All disbursements from the Funds shall be authorized and made by the Owner.
3. The Fund shall be maintained as a separate trust account and may be drawn in increments up to its aggregate amount or the aggregate may be drawn. Any incremental draw will not impair or diminish the right of the Owner to make subsequent draws in any amount(s) up to the aggregate amount of the Fund. The proceeds of a draw may be disbursed as follows:
 - A. To the contractor during the course of construction to promote the completion of the project, as may be deemed necessary by the Owner.
 - B. To the Owner the entire Fund or balance remaining therein in the event of a default by the Contractor under the Construction Contract to be used by the Owner to indemnify it for any loss, damage or expense whatsoever which it may suffer by reason of Contractor's failure to perform the construction contract.
 - C. To the Contractor the balance of such Fund remaining after three months from the date that the work has been substantially completed in accordance with the Construction Contract (except for punch list items and items awaiting seasonal opportunity to complete) and accepted by the Contracting Officer in accordance with Section 20 of the General Conditions, but only so long as the Project is free and clear of any liens, claims or encumbrances whatsoever. There shall be withheld from the payment of said balance an amount equal to 2½ percent of the total amount of the Construction Contract, which sum is to be retained in account for a period of 15 months from the date of substantial completion or for another period less than 15 months if authorized by the Owner. Said sum shall be held as a Fund to guarantee against defects in construction due to faulty materials or workmanship or damage to the premises resulting from such defects, which defects or damage become apparent within one year after date of substantial completion. Said sum may be used for the correction of defects or damage in the event the Contractor fails to make such corrections. The Contractor's liability for such corrections is not limited by the amount of such sum.
4. It is agreed that Contractor may provide a separate unconditional and irrevocable Letter of Credit to satisfy the requirement set forth in paragraph 3C above that 2½ percent of the total Construction Contract amount, for

latent defects, to be retained for fifteen months beyond the date of substantial completion. If such separate unconditional and irrevocable Letter of Credit is provided, it must be delivered to the Owner and made subject to this Completion Assurance Agreement before any balance remaining in the fund is released to the Contractor or the Fund canceled.

5. Any other provision of this Agreement notwithstanding, it is understood and agreed that no funds may be disbursed to the Contractor so long as there are any outstanding liens, claims or encumbrances against the Project, written notice of which have been received by the Owner. If any such claims, liens and encumbrances have not been removed or resolved, and written notice of such removal or resolution receive by the Owner, by the date of substantial completion, the Owner may in its sole discretion exercise any of its rights under the General Conditions of the Construction Contract

6. It is expressly understood by all parties hereto that in the event of a default by the Contractor in any of its obligations under the Construction Contract, the entire Fund, any part thereof, or balance remaining, therein may, at the option of the Owner, be paid to the Owner together with an assignment of all rights granted to the Owner.

7. This Agreement shall not alter or limit the obligations and liabilities of Contractor under the Construction Contract, but shall be deemed to be additional security for the performance by the Contractor of its obligations thereunder.

8. It is understood and agreed that in the event the Fund is held by a depository, that the depository is not charged with any duty or responsibility to see to the performance of or compliance with any agreements between any of the parties hereto other than that of paying over the Fund as directed in writing by the Owner, nor to see to the application of the Fund after making disbursements as so directed. It is expressly understood and agreed that any claim, controversy, dispute or disagreement which may exist between the Contractor and the Owner shall have no effect whatsoever upon the obligation of the depository to pay the Owner promptly upon receipt of a notice issued pursuant to the terms of the Fund and this Agreement.

9. Notwithstanding any other provision of the Construction Contract, it is agreed the fund will be administered pursuant to the terms of the Fund, this Agreement and any consistent provisions in the Construction Contract. Any inconsistent provisions in the Construction Contract shall be superseded and controlled by the Fund and this Agreement. It is expressly agreed that reference to this Agreement or collateral Construction Contract document does not make the issuance of the Fund conditional.

Contractor

Owner

Name and Title

Name and Title

Approved by Bank:

INDIAN ENTERPRISE QUALIFICATION STATEMENT

The Undersigned certifies under oath the truth and correctness of all answers to questions made hereinafter:

1. Applicant wishes to qualify as:

An "Economic Enterprise" as defined in Section 3(e) of the Indian Financing Act of 1974 (P.L. 93-262); that is "any Indian-Owned...commercial, industrial or business activity established or organized for the purpose of profit: Provided, that such Indian Ownership shall constitute not less than 51 percent of the enterprise:

--or--

A "Tribal Organization" as defined in Section 4(c) of the Indian Self-Determination and Education Assistance Act (P.L. 93-63 8); that is: "the recognized governing body of any Indian Tribe; any legally established organization of Indians which is controlled, sanctioned or chartered by such governing body or which is democratically elected by the adult members of the Indian community to be served by such organization and which includes the maximum participation of Indians in all phases of its activities: Provided, that in any case where a contract is let or grant made to an organization to perform services benefiting more than one Indian Tribe, the approval of each such Indian Tribe shall be a prerequisite to the letting or making of such contract or grant..."

2. Name of Enterprise or Organization: _____

Address: _____

Telephone No.: _____

3. Check One:

- Corporation Joint Venture
 Partnership Other:
 Sole Proprietorship

4. Answer the following:

If a Corporation:

a. Date of incorporation: _____

b. State of incorporation: _____

c. Give the names and addresses of the officers of this Corporation and establish whether they are Indian (I) or Non-Indian (NI).

Name and I or % of Stock

Social Security No. NI Title Address Ownership

_____ President _____

_____ Vice-President _____

_____ Secretary _____ or Clerk

_____ Treasurer _____

d. Complete the following information on all stockholders who are not listed in c. above, owning 0% or more of the stock. Establish whether they are Indian (I) or Non-Indian (NI).

Name and I or % of Stock

Social Security No. NI Address Ownership

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

If a Sole Proprietorship or Partnership:

a. Date of Organization: _____

b. Give the following information on the individual or partners and establish whether they are Indian (I) or Non-Indian (NI).

Name and I or % of Stock

Social Security No. NI Address Ownership

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

If a Joint Venture:

a. Date of Joint Venture Agreement: _____

b. Attach the information for each member of the joint venture prepared in the appropriate format given above.

Give the name, address, and telephone number of the principal spokesperson of your organization:

Has any officer or partner of your organization listed in #4 been an officer or partner of another organization that failed in the last ten years to complete a contract? _____

If yes, state circumstances:

Has this enterprise failed in the last ten years to complete any work awarded to it or to complete the work on time? _____

If so, note when, where and why:

8. Will any officer or partner listed in #4 be engaged in out-side employment?

____ Yes ____ No

If Yes, complete:

Hours Per Week

Name/Title Outside the Enterprise

_____	_____
_____	_____
_____	_____

9. If the enterprise or anyone listed in #4 above, currently subject to an administrative sanction issued by any department or agency of the Federal Government?

Yes No

If Yes, complete:

Date of Type of Department

Name of person/business Action or Agency

10. Does this enterprise have any subsidiaries or affiliates or is it a subsidiary or affiliate of another concern?

Yes No

If Yes, complete:

Name and address of subsidiary, Description
affiliate or other concern of Relationship

11. Does this enterprise or any person listed in #4 above have or intend to enter into any type of agreement with any other concern or person which relates to or affects the on-going administration, management or operations of this enterprise? These include but are not limited to management, and joint venture agreements and any arrangement or contract involving the provision of such compensated services as administrative assistance, data processing, management consulting of all types, marketing, purchasing, production and other types of compensated assistance.

Yes No

If yes, attach a copy of any written agreement or an explanation of any oral or intended agreement.

12. Has this enterprise ever been subject to a judgment of any court or administrative sanction (Federal, State, or Tribal)?

Yes No

Has any individual listed in #4 ever been subject to judgment of any court or administrative sanction (Federal, State, or Tribal)?

Yes No

If the answer is Yes to either question, furnish details in a separate attachment.

13. Has any tax lien or other collection procedure been instituted against this enterprise or the individuals listed in #4 as a sole proprietor or partner in their capacities with this enterprise or other enterprise?

Yes No

If yes, furnish details in a separate exhibit.

14. Has this enterprise or any person listed in #4 ever been involved in a bankruptcy or insolvency proceeding?

Yes No

If yes, provide details in an attachment.

15. What dollar amount of Working Capital is available to your enterprise prior to the start of construction?

\$ _____

Explain the source of these funds:

Include a copy of the Company's most recent audited financial statement.

16. How will project development bookkeeping and payroll be maintained: (check one)

a. By contract with an outside professional accounting firm: _____

Name: _____ Address: _____

_____ Telephone: _____

b. Records are to be kept by enterprise personnel: _____

If "b" has been checked--state the qualifications of your personnel to perform this function:

c. Other: _____

17. Trade References (include addresses and phone numbers):

18. Bank and credit references (including addresses and phone numbers):

19. Indicate the core crew employees in your work force, their job titles, and whether they are Indian or Non-Indian. Core crew is defined as an individual who is either a current bonafide employee or who is not a current employee but who is regularly employed in a supervisory or other key skilled position when work is available.

b. Over the past three years, what has been the average number of employees:

20. Attach certification by a tribe or other evidence of enrollment in a federally recognized tribe for each officer, partner or individual designated as an Indian in #4.

- 21. Attach a certified copy of the charter, article of incorporation, by-laws, partnership agreement, joint venture agreement and/or other pertinent organizational documentation.
- 22. Explain in narrative form the stock ownership, structure, management, control, financing, and salary or profit sharing arrangements of the enterprise, if not covered in answers to specific questions heretofore. Attach copies of all shareholder agreements, including voting trust, employment contracts, agreements between owners and enterprise. Include information on salaries, fees, profit sharing, material purchases, and equipment lease or purchase arrangements.
- 23. Evidence relating to structure, management, control, and financing should be specifically included. Also, list the specific management responsibilities of each principal, sole proprietor, partner, or party to a joint venture (as appropriate) listed in response to #4.
- 24. Attach evidence that the enterprise (or an individual in it) is appropriately licensed for the type of work that is to be performed. Include Federal ID Number.
- 25. Attach a brief resume of the education, technical training, business, employment, design and/or construction experience for each officer, partner or sole proprietor listed in #4. Include references.

NOTES:

- I. Omission of any information may be cause for this statement not receiving timely and complete consideration.
- II. The persons signing below certify that all information in this INDIAN ENTERPRISE QUALIFICATION STATEMENT, including exhibits and attachments, is true and correct.
- III. Print and type name below all signatures.

If applicant is Sole Proprietor, Sign Below:

Name Date

If applicant is in a Partnership or Joint Venture, all Partners must sign below:

Name Date

Name Date

If applicant is a corporation, affix corporate seal

Corporate Seal

By: _____
President's Signature Date

Attested by: _____
Corporate Secretary's Signature Date

WARNING: U.S. Criminal Code, Section 1010, Title 18, U.S.C. provides in part:
"Whoever...makes, passes, utters, or publishes any statement, knowing the same to be false...shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

FORM of CONTRACT

This Contract is made between the **Hualapai Tribe**, P.O. Box 179, Peach Springs, AZ 86434 (the "Tribe"), and _____, an independent contractor whose address is _____, EIN: _____ (the "Contractor"). The Tribe agrees to contract for the services of Contractor, and Contractor agrees to provide services, under the terms and conditions of this Contract.

1. Scope of Work.

- a. The Contactor agrees to furnish all labor, materials, supervision, and services to complete the Project, as shown in Attachment A – Scope of Work

2. Payment for Services.

- a. In full consideration of the professional services to be provided under this Contract, the Tribe agrees to pay Contractor a not-to-exceed sum of _____ (\$X.00) including all building materials, reimbursable expenses, all work under this Contract unless authorized in writing by the Tribe via change order and TERO tax.
- b. As a precondition to receipt of any payments under this Contract, Contractor must provide the Tribe an invoice detailing all work performed under this Contract. The Contractor shall submit to the Owner two (2) invoices for payment after final completion of the Project.
- c. Payment for the approved invoice will be made within Thirty (30) days of receipt of such invoice by the Planning and Economic Development Department of the Tribe.
- d. Contractor further agrees that final payment for his services will be made after a review of the work performed is completed by the Tribe's Principal Contacts. If the work is found to be unsatisfactory, the Tribe reserves the right to withhold final payment indefinitely until all deficiencies are corrected.

3. Period of Performance.

- a. The Contractor shall begin work on this Project on the date agreed upon by both parties and shall achieve final completion of all Project work by no later than _____ (X) calendar days from the date of the Notice to Proceed. The Contractor fully understands and hereby acknowledges that time is of the essence.
- b. Contractor agrees that he is solely responsible for beginning and completing this Contract by the dates specified in this Contract.
- c. Contractor agrees that he shall be responsible for any costs to the Tribe associated with not completing this Contract by the scheduled ending date, unless unforeseen circumstances beyond the Contractor's control were caused by the Tribe.

4. Principal Contacts.

a. All notices under this Contract shall be sent to the following designated Principal Contracts under this Contract. The Tribe may change its Principal Contacts at any time by written notification.

b. Tribe's principal contacts:

Contracting Officer: Kevin Davidson, Planning Department Director

Compliance Officer: Salena Siyuja, Grants & Contracts

Project Manager: Philip G. Wisely, Public Services Director

c. Contractor's principal contact: _____

d. Contractor and his work shall be monitored by the Contracting Officer to determine whether the Contractor is in compliance with this Contract.

5. Independent Contractor.

a. It is understood and agreed that Contractor is an independent contractor with respect to all work to be performed under this Contract, and that Contractor is not agent or employee of the Tribe. It is further understood and agreed that Contractor is not authorized to act on behalf of the Tribe, and that actions of Contractor are not actions of the Tribe.

b. Contractor will be responsible for providing all tools and equipment necessary to perform the tasks associated with this contract.

c. Contractor will be responsible for paying all employees or subcontractors he hires to perform any of the work under this Contract. Contractor's employees and subcontractors are not the employees of the Tribe. Contractor is solely responsible for paying his employees and subcontractors and for any obligation to pay or withhold any federal, state, tribal or local taxes on the amounts Contractor pays to his employees and subcontractors.

d. Contractor will be responsible for payment of all applicable federal, state, tribal and local taxes, and/or special levies required under unemployment insurance, social security, income tax, and/or other laws, with respect to Contractor's performance of his obligations and receipt of payment under this Contract. The Tribe will not withhold any taxes payable by the Contractor on the amounts paid to Contractor under this Contract.

e. Contractor and the Tribe shall each retain its right to conduct its own separate business affairs, provided that such affairs do not interfere with the parties' obligations under this Contract.

6. Representations and Warranties of Contractor.

a. Contractor represents and warrants to the Tribe that he is not subject to any obligations, contracts, or restrictions that would prevent him from entering into or carrying out the provisions of this Contract. Contractor further represents and warrants that he has all of the qualifications, education, experience and skills required to complete the work intended to be completed under this Contract. If Contractor is not so qualified, his lack of qualification is grounds for immediate termination of this Contract by the Tribe without liability. Contractor shall devote his best efforts to

carry out the work required by this Contract is accordance with the standard of care, skill and diligence normally adhered to by a person in this field providing similar services.

7. Termination.

- a. This Contract may be terminated by either party at any time without cause by giving thirty (30) days advance written notice of such termination to the other party. Contractor shall only be paid for work performed and reasonably billed for prior to the effective date of termination. Contractor's obligations under Articles 8 through 11 shall survive, and shall not be affected by, termination of this Contract.

8. Indemnification.

- a. Contractor shall be responsible for any wrongful or negligent acts or omissions performed by him, his employees or his subcontractors associated with his performance under this Contract and agrees to indemnify and hold the Tribe harmless from any liability or damage to person or property that arises from or is related to any such act or omission, including any attorney fees that may be incurred.

9. Confidentiality.

- a. Contractor acknowledges that all information related to Contractor's work under this Contract, including all findings, reports, and other information either provided directly or indirectly by the Tribe in connection with the Contract or developed, compiled or created by Contractor in performing his services under this Contract, and all improvements made or conceived by Contractor under this Contract, is confidential and proprietary information owned by, and of great value to, the Tribe. Accordingly, Contractor agrees not to disclose any such confidential information to any person without the prior, written authorization of the Chairman (or his written designee) of the Tribe.
- b. Regardless of how or when this Contract is terminated, within five (5) working days of completion of the work under this Contract, Contractor shall deliver to the Tribe all copies (including those on computer disk or other electronic medium) of all documents, drawings, specifications, and other materials or information which were furnished directly or indirectly by the Tribe to Contractor in connection with this Contract or which were prepared or acquired by Contractor in performance of services under this Contract.
- c. Contractor shall not use any of the proprietary information described in this paragraph for anyone other than the Tribe's benefit.

10. Code of Conduct.

- a. Contractor shall comply with the provisions of the "Hualapai Indian Tribe Code of Conduct."

11. Intellectual Property.

- a. The title to all work completed by Contractor under or associated with this Contract shall be in the Tribe. Contractor will promptly disclose to the Tribe all inventions, improvements, designs, publications and ideas made or conceived by Contractor in the course of or associated with providing services under this Contract, regardless of whether Contractor develops those

inventions, improvements, designs, publications or ideas after the termination on this Contract. Contractor agrees to assign to the Tribe all right and title to all such inventions, improvement, designs, publications and ideas, and all copyrights, patents, and royalties associated with or derived from such ideas.

12. Amendment.

- a. This Contract may be amended only by a written document signed by the Contracting Officer, the Grants and Contracts Compliance Officer of the Tribe and by the Contractor, and approved by the Chairman or Vice Chairman of the Tribe.

13. Assignment.

- a. All rights and obligations under this Contract are personal to Contractor, and Contractor may not assign this Contract, or any rights or obligations hereunder, to any person. Any such attempted assignment shall be void.

14. Governing Law.

- a. This Contract shall be governed by the laws and ordinances of the Hualapai Indian Tribe. All claims arising under or related to this Contract shall be brought to the Contracting Officer, Grants & Contract Officer then to the Hualapai Tribal Court.

15. Retention of Records.

- a. Pursuant to 24 CFR 85.26(i)(10) and (11), access shall be given by the Contractor to the Owner, HUD, the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and records of the Design Professional which are directly pertinent to that specific Contract for the purpose of making an audit, examination, excerpts, and transcriptions. All required records shall be retained for three years after the Owner or Design Professional and other sub-grantees make final payments and all other pending matters are closed.

16. Environmental Compliance.

- a. Contractor shall comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

17. Energy Efficiency.

- a. Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

18. Indian Preference.

- a. The Contractor and each of his or her subcontractors shall give preference in all hiring to Indians as required by the Indian preference in accordance with 24 CFR 1003.510 and Hualapai Procurement Regulations.

19. Tribal Employment Rights.

- a. The Contractor shall comply with Tribal Ordinance Number 01-80, as amended.
- b. The Contractor shall pay a tax of 5% of the total amount of each contract (TERO Tax).

20. Interest of Members of Congress.

- a. No member of, or delegate to, the Congress of the United States of America or Resident Commissioner shall be permitted to any share or part of this Contract or to any benefit that may arise from it.

21. Prohibition Against Liens.

- a. The Contractor is prohibited from placing a lien on the Owner's property. This prohibition shall be placed in all subcontracts.

22. Operation and Maintenance Data.

- a. Upon completion of the Work the Contractor shall provide operating and maintenance instructions/ training and parts lists for materials, equipment and systems, including electrical and control items, being supplied.

23. Warranty of Construction.

- a. In addition to any other warranties in this Contract, the Contractor warrants, except as provided in paragraph (J) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of two years from the date of final acceptance of the work. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of two years from the date that the Owner takes full possession.
- b. The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damages to Owner-owned or controlled real or personal property when the damage is the result of: (1) The Contractor's failure to conform to contract requirements; or (2) Any defects to equipment, material, workmanship or design furnished by the Contractor.
- c. The Contractor shall restore any work damaged in failing the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for two years from the date of repair or replacement.
- d. The Project Manager shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

- e. If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
 - f. With respect to all warranties, expressed or implied, from subcontractors, manufactures, or suppliers for work performed and material furnished under this contact, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice, (2) Require all warranties to be executed in writing for the benefit of the Owner, and (3) Enforce all warranties for the benefit of the Owner.
 - g. In the event the Contractor's warranty under paragraph (A) of the clause has expired, the Owner may bring suit at its own expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.
 - h. Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect or material or design furnished by the Owner nor for the repair of any damage that results from any defect in Owner-furnished material or design.
 - i. Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (A) and (C) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceeding may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
 - j. This warranty shall not limit the Owner's rights under the Inspection and Acceptance of Construction section of this contract with respect to latent defects, gross mistakes or fraud.
 - k. Provide duplicate, notarized copies of documents required in this Section.
24. Final Cleaning.
- a. The Contractor shall leave the site clean and free of debris, and responsibly dispose of any waste materials created during the work.

IN WITNESS WHEREOF, the undersigned parties hereby execute this Agreement.

CONTRACTOR

By: _____ signature
Authorized Officer

Printed Name & date: _____

HUALAPAI TRIBE

By: _____ signature
Contracting Officer (Program Manager)

Printed Name & date: _____

By: _____ signature
Grants and Contracts Compliance Officer

Printed Name & date: _____

By: _____ signature
Chairman or Vice Chairman

Printed Name & date: _____

Technical Provisions – DOWL

TECHNICAL PROVISIONS

Table of Contents

SECTION 01 - TRENCH EXCAVATION AND BACKFILL FOR PIPELINES AND APPURTENANT STRUCTURES

SECTION 04 – WATER TRANSMISSION AND DISTRIBUTION MAIN

SECTION 05 – WATER SERVICE LINES

SECTION 06 – GALVANIC ANODES FOR METALLIC FITTINGS

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

SUBMITTAL REVIEW FORM

SECTION 01 - TRENCH EXCAVATION AND BACKFILL FOR PIPELINES AND APPURTENANT STRUCTURES

TP - 01.01 SCOPE:

The work covered by this section includes the furnishing of all plant, labor, tools, equipment, and materials and performing all operations in connection with the excavation, trenching and backfilling of all pipe lines, structures and accessories.

Excavation, as used in these specifications refers to all construction activities necessary to install subsurface utilities in accordance with the plans and specifications. Such activities include, but are not limited to:

- A. All necessary clearing, grubbing and site preparation; removal of all materials that may interfere with construction activities (except existing pipe work, conduits, utility structures or other items to be left in place) to the lines and grades indicated on the plans and otherwise described herein.
- B. Removal and/or storage of subsurface materials from trench and construction excavation areas to allow installation of designated utilities or structures. All suitable material removed from excavations shall be used, insofar as practicable, in the formation of embankments, fills and backfilling.
- C. Preparation of sub-grades and backfilling of trench and construction areas upon completion of utility or structure construction.
- D. All necessary bracing, shoring and protection (but not including tight sheeting in trenches and structure excavation ordered left in place by the Owner or Owner's Representative).
- E. Final grading, dressing and cleanup of the construction site.

TP - 01.02 SAFETY - PROTECTION OF EXCAVATION, WORK AND PERSONS:

The Contractor shall provide safe working conditions at all excavations. All trench excavation shall be coordinated in strict accordance with current Occupational Safety and Health Standards (OSHA) - Construction Standards for Excavations (29 CFR Part 1926, Subpart P) issued by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) as well as applicable state and local regulations. It is the Contractor's responsibility to become knowledgeable of the regulations and comply with all requirements contained therein.

Excavations and adjacent areas shall be inspected daily by a competent person provided by the Contractor for evidence of hazardous conditions. Prior to the start of construction, the Contractor shall provide the Owner a list of scheduled inspections when required. A record of these daily inspections shall be kept by the Contractor and be made available to the Owner upon request. Workers in excavations shall be protected from cave-ins. Protection can be by sloping and benching systems, support systems, shield systems, and/or other protective systems as described in the regulations. Only excavations which are entirely in stable rock or excavations which are less than five (5) feet in depth and, upon examination by a competent person, show no indication of potential cave-in are exempt from the requirement for cave-in protection.

- A. Trenches: No material shall be placed within two (2) feet of the edge of the excavation. Where employees are required to be in excavations more than four (4) feet deep, an adequate means of exit such as a ladder or steps shall be provided and located so as to require no more than 25 feet of lateral travel. It is the Contractor's responsibility to become knowledgeable of the regulations and comply with all requirements contained therein. The total length of open trench shall not exceed 500 feet at any time. Trenches shall be completely backfilled at the end of each working day, unless otherwise approved by the Owner or Owner's Representative and appropriate protection is utilized.

B. Shoring and Sheet piling Sections:

1. Protection of employees in excavations shall conform to applicable OSHA Standards. Any trench protection and modification to trenching safety plans shall be submitted to the Owner or Owner's Representative in writing to be maintained as part of the record.
2. The Contractor shall install all shoring and sheet piling systems required to prevent cave-ins and protect employees, adjacent property, and adjacent structures in accordance with current OSHA standards. No extra payment will be made for these items, the cost thereof being merged with and considered a part of the cost for the related excavation.
3. Before sheet piling is withdrawn, or trench boxes moved forward, they shall be raised, in place, just above the pipe crown to safely allow the Contractor to completely fill any voids left in the pipe zone.

The Contractor shall ensure that all employees wear proper protective clothing during construction in accordance with the current OSHA standards. The following measures or provisions are to be adhered to at all times during the construction project:

- A. All heavy construction machinery, such as trenching machines, bulldozers, and backhoes, must be equipped with a roll bar meeting the requirements of the above referenced regulation.
- B. Safety helmets shall be worn by all personnel working on the site.
- C. Safety shoes or boots will be worn by all personnel working on the site.
- D. When appropriate, proper eye protection will be worn by all personnel working on the site.
- E. When appropriate, proper gloves will be used by personnel working on the site.
- F. When appropriate, proper safety vest will be worn by all personnel working on the site.

TP - 01.03 WORK WITHIN RIGHT-OF-WAYS & TRAFFIC CONTROL:

All work within the right-of-way of a street, road, highway, or other public thoroughfare, including roads, sidewalks or trails, or work which requires encroachment into the right-of-way of a public thoroughfare, shall incorporate adequate signs, barricades, warning lights, and/or flagmen to ensure the protection of the work, protection of the workers, and the safety of the public. When performing any work within the right-of-way of roads or railroads, the Contractor shall comply with the right-of-way permit, as applicable, for the installation including all of the requirements for traffic control and compaction. All work within the right-of-way of roads shall be performed in accordance with the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-03 U.S. Customary Units – Section 614" and/or local, municipal, state or other federal requirements as noted.

In addition, the Contractor shall submit a traffic control plan to the appropriate right-of-way controller and the Owner or Owner's Representative for review and approval prior to any work within the right-of-way of any roads or railroads. The plan shall be in accordance with any applicable encroachment permits prior to any work with the right-of-way of any road or land. Any deviation from the plan must be submitted for review and approval by the appropriate right-of-way controller and Owner or Owner's Representative. All open construction, obstructions, or other hazards left in place at the end of a work session shall be barricaded and marked by yellow warning lights, which shall be illuminated from sunset to sunrise. All signs, barricades, warning lights, and other traffic control devices, and all traffic control activities shall be in accordance with the most recent edition of the Federal Highway Administration "Manual on Uniform Traffic Control Devices" (ANSI D6.1), OSHA regulations, and the requirements of the transportation department which owns or maintains the thoroughfare.

The Contractor shall at all times perform his work so as to cause the least possible inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property in a manner satisfactory to the Owner.

No road or street shall be closed to the public except with the permission of the Owner and proper governmental authority. Private driveways shall remain open to the maximum extent possible. Fire hydrants on or adjacent to the work shall be kept accessible to firefighting equipment at all times.

Temporary provisions shall be made by the Contractor to insure the use of sidewalks, and the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by the Owner.

TP - 01.04 ROAD, RAILROAD AND SPECIAL UTILITY CROSSINGS (IF REQUIRED):

The Contractor shall be responsible for compliance with all requirements of special crossing permits applicable to this project. The Contractor shall provide copies of such permits prior to the commencement of work. If no crossing permits are appended, and such crossings are indicated on the plans, crossings will comply with all applicable provisions of Technical Provisions 11, in addition to those indicated under other provisions of this Technical Provision. At least two (2) working days' notice shall be given to the Owner or Owner's Representative before work is done on any crossing.

TP - 01.05 DRAINAGE:

The Contractor shall control the grading in the vicinity of the excavation so that the ground surface is properly sloped to prevent water from running into the excavated areas. Water that has accumulated in the excavation from rainfall and/or surface runoff, or from any other cause which might have been prevented by proper care and foresight, shall be removed and the subgrade restored to its proper bearing capacity prior to commencing construction activities, all at the Contractor's expense.

TP - 01.06 PROTECTION OF EXISTING UTILITIES:

The Contractor shall call and utilize the appropriate underground service location company to mark existing utilities within the project area. It shall be the Contractor's responsibility to determine the locations of existing underground utilities including, but not limited to, gas lines, fiber optic lines, telephone lines, pipelines, and drainage lines, not shown on the drawings and to confirm the exact locations of those existing utilities shown on the drawings. Existing utilities shall be protected from damage during excavation and backfilling of trenches, and if damaged, shall be repaired or replaced at the Contractor's expense. Broken water lines must be cleaned, disinfected, and flushed in accordance with AWWA C651 before being returned to service.

Continuation of the excavation shall not be permitted until damaged utilities have been repaired to the satisfaction of the Owner and the respective utility company. It shall be the Contractor's sole responsibility to protect or remove and replace any or all culverts as required for the satisfactory performance of the work.

TP - 01.07 LOCATING FACILITIES FOR INSTALLED SANITATION FACILITIES:

A. Warning Tape and Tracer Wire:

1. Warning Tape: Warning tape shall be installed 18-inches directly above the crown of the water, sewer, electrical, or other pipe with the printed side up. The warning tape shall also be installed as continuous skirting at the exterior of manholes, valve boxes, or other installed apparatus. For water pipes (mains and service lines), the warning tape shall be BLUE in color with "CAUTION: BURIED WATER LINE BELOW" continually printed on it. For sewer pipes (mains or service lines), the warning tape shall be GREEN in color with "CAUTION: BURIED SEWER LINE BELOW" continually printed on it. For

electrical lines, the warning tape shall be RED in color with “CAUTION: BURIED ELECTRICAL LINE BELOW” continually printed on it. The tape shall be minimum 3-inches wide, 5 mils total thickness and composed of plastic with a metal foil core. Where tracer wire is buried with the pipe line, the locator/warning tape may be plastic without metal foil.

2. Tracer Wire: For water mains and water service lines. Direct bury 10 AWG copper clad steel wire as manufactured by Copperhead Industries, LLC, or direct bury 10 AWG solid copper wire as manufactured by Agave Wire LTD, minimum 261-lb break load with 30 mil High Molecular Weight Polyethylene jacket, blue color, or approved equal. The tracer wire shall be attached to the pipe a minimum of three (3) times for each pipe length.
 - a. The tracer wire shall be securely bonded together with an approved Underground Waterproof Splice Kit at all wire joints to provide electrical continuity, and it shall be accessible at all trace wire access points. The Underground Waterproof Splice Kit shall be equal to 3M Direct Bury Splice Kit DBR/Y-6.
 - b. Tracer wire access points shall be Copperhead SnakePit Roadway as manufactured by Copperhead Industries, LLC or approved equal. Materials used to construct lid and tube shall be non-corrosive or corrosion resistant. Tube material shall be of high grade ABS, or equivalent rigid plastic that meets or exceeds ASTM D-1788, Type 1 requirements. Lid material shall be of cast iron or ductile iron and color-coded according to American Public Works Association (APWA) standards. Blue designate water, and green designates sewer. Spacing between tracer wire access points shall be indicated on the plans or as specified by the Owner.

B. Utility Line Markers, Bollards, and Metal Marker Posts: Retroreflective tape shall be installed around the utility line markers, bollards, and metal marker posts according to the manufacturer’s recommendation. Tape placement shall be approximately 6 inch from the marker top as shown on details. The 6 inch tape shall be 3M High Density Yellow Pressure Sensitive or approved equal.

1. Utility Line Marker: Shall be a minimum of 66 inches in length and 3-3/4 inches in width. The utility marker may be installed within the ROW if approved by the Owner or Owner’s Representative. The location and frequency of the utility line markers is indicated on the plans. The utility line markers shall be installed directly over the item that it is marking with an anchor barb bury depth of 18-inches.
 - a. Water markers shall be blue in color, model CRM306608 with anchor barb and “CAUTION WATER PIPELINE” text on the marker as manufactured by Carsonite Composites, or equal.
 - b. Sewer markers shall be green in green, model CRM306607 with anchor barb and “CAUTION SEWER PIPELINE” text on the marker as manufactured by Carsonite Composites, or equal.
2. Bollards: Bollards shall be 78 inches long with a four (4) inch diameter. They shall be installed to leave 48 inches exposed above ground.
 - a. The four (4) inch diameter posts shall be aluminum or steel pipe filled with concrete. Bollards shall be painted with a minimum of two (2) coats of yellow paint designed for outdoor commercial use. Bollards shall be properly cleaned and the surface prepared in accordance with the paint manufacturer’s recommendations prior to painting. Under no circumstances shall bollards be installed within the right-of-way of any roadways, unless specifically indicated on a right-of-way permit or as approved by the right-of-way controller.
 - b. Set bollards in concrete in 12 inch diameter holes and depth of bollard in concrete of 30-inches. Posts shall be set in a vertical position, plumb, in line and centered in the footing. Six (6) inches of concrete shall be placed under the post and concrete shall extend two (2) inches above grade and be crowned to shed water. Forms are not required, but may be used.

3. Metal Marker Posts: Markers shall be 66 inches long, 2-1/2 inches diameter, concrete filled, with a two (2) inch diameter stampable aluminum or brass cap. The cap shall be Berntsen Model CD2L, or approved equal. Metal marker posts shall be installed to leave 36 inches exposed above ground.
 - a. The 2-1/2 inch diameter aluminum or steel utility markers with stampable aluminum or brass caps shall be installed to mark the location of all marked facilities. Marker posts shall be painted with a minimum of two (2) coats of yellow paint designed for outdoor commercial use. The marker posts shall be properly cleaned and the surface prepared in accordance with the paint manufacturer's recommendations prior to painting. Under no circumstances shall metal marker posts be installed within the right-of-way of any roadways, unless specifically indicated on a right-of-way permit or as approved by the right-of-way controller.
 - b. Set metal marker posts in concrete in 10-inch diameter holes and depth of metal marker post in concrete of 30 inches. Posts shall be set in a vertical position, plumb, in line and centered in the footing. Six (6) inches of concrete shall be placed under the post and concrete shall extend two (2) inches above grade and be crowned to shed water. Forms are not required, but may be used.

TP - 01.08 EXCAVATION:

All excavation, other than by drilling and blasting, undertaken with the excavation equipment commonly used in the industry for this type of excavated material shall be classified as common excavation. All excavation shall be made by open cut method except as approved or specified. During excavation, materials suitable for backfill shall be neatly piled no closer than 24-inches from the edge of the excavation. All materials not required or not suitable for backfill shall be removed and wasted at locations designated by the Owner or Owner's Representative.

- A. Width: The sides of all trenches for the installation of utility piping systems shall be as nearly vertical as soil conditions will permit from ground level to the pipe. Except for the trenching of 1-inch water service lines, the width of the trench shall not be less than 16-inches nor more than 24-inches wider than the outside diameter of the pipe barrel. Trench excavation shall be centered on pipe alignment such that a minimum clear space of eight (8) inches is provided on each side of the pipe. Trench width above the level of the top of the pipe may be as wide as necessary for shoring or sheathing and for proper installation of the work.
- B. Depth: The trench shall be excavated to the depth that permits pipe to be laid at the elevations shown on the drawings or with the required depth of cover specified by the Owner or Owner's Representative, such as below the frost line. Depth of cover shall be measured from the finished grade or the surface of the permanent improvement to the top of the pipe barrel.
- C. Preparation: The bottom of the trenches shall be accurately shaped to line and grade and shall provide uniform bearing and support for each section of the pipe on specifically placed bedding material at every point along its entire length. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and shall be only of such length, depth and width as required for properly making the particular type joint. Care shall be taken not to excavate below the depths indicated. Unauthorized over depths shall be backfilled with suitable bedding material at the Contractor's expense.
- D. Previous Excavation: If the trench passes over a sewer or other previous excavation, the trench bottom shall (1) be compacted to provide support equal to that of the undisturbed native soil or (2) conform to the specific regulatory requirements that preclude damage to the existing installed facility.
- E. Unstable Subgrade: Where soft, spongy or otherwise unsuitable material is encountered, which will not provide a firm foundation for pipe, the Owner or Owner's Representative will direct the extent to which removal and replacement shall be made with suitable material. Special pipe foundation material is NOT anticipated. However, if required, a price shall be negotiated between the Owner and Contractor for special pipe foundation material.

F. Underground Obstructions: The Contractor shall preserve intact any underground pipes, culverts or other utilities encountered during construction (except as hereinafter permitted) provided their location is such that they do not interfere with new pipelines or structures being installed. The Contractor shall notify all appropriate utility authorities of his construction schedule so they may be at the site to locate and protect their property. If any utilities or structures are accidentally broken or disturbed, they shall be replaced immediately to a condition at least equal to that in which they were found, all at the Contractor's expense.

Couplings used to repair water and sewer mains or service lines shall be approved by the Tribal Utility and the Owner or Owner's Representative. The repair work shall be done in a manner acceptable to the Owner or Owner's Representative and the utility company. Any existing water or sewer services that will intersect or interfere with the new pipelines or structures shall be rerouted by the Contractor in the manner indicated by the Owner or Owner's Representative.

Existing water or sewer services from the mains to private property that interfere with trenching operations may be cut and replaced at the Contractor's option and expense, provided that users of such services are notified at least 2 hours in advance and that the use of such service shall in no case be interrupted for more than 4 hours, unless specifically permitted in writing by the user. Materials and construction for these items shall be as provided in other sections of these specifications. All new and existing water and sewer mains and water and sewer services shall be protected from freezing at all times during construction.

G. Rock: Solid rock or loose rock (stones and boulders) shall be removed or excavated as needed for pipeline installation. Trench in which rock, stones or boulders is encountered shall be excavated at least 6 inches deeper than the pipe invert and refilled to the required elevation with sand, gravel, or crushed rock passing a $\frac{3}{4}$ inch mesh screen, or bedding material. Backfill above bedding shall be 6-inch minus material from excavation. Bedding material shall extend upward at least 12 inches above the top of the pipe. Payment for rock excavation and bedding shall be subsidiary to other bid items.

H. Structural Excavation: Excavation for structures (e.g., vaults, tanks, manholes, lift stations, and etcetera) shall extend a sufficient distance from walls and footings to provide for forming, except where concrete for walls or footings is authorized to be deposited directly against excavated surfaces. Care shall be taken to avoid excavating below the depths indicated in the plans. Over-excavation shall be restored to proper elevation by filling with suitable granular bedding material at the Contractor's expense.

TP - 01.09 DEWATERING:

The Contractor shall remove and dispose of water entering the trenches and shall keep the trenches water free until the facilities are in place and sealed against the entrance of water. In no case shall water, earth, or any foreign materials be allowed to enter the water or sewer lines. All water removed from trenches shall be conveyed to natural drainage channels, storm sewers, or proper reservoirs as approved by Owner or Owner's Representative. Such removal of water shall be in a manner that prevents property damage, erosion, or sedimentation. Dewatering shall be subsidiary to other bid items and no separate payment will be made.

TP - 01.10 SEPARATION OF WATER AND SEWER PIPELINES:

Water lines located near sewer facilities present conditions for potential cross contaminations. Protection from cross contamination can be provided by separation of the facilities and use of extra protection measures. For measuring separation, all measurements shall be the clearance between pipes and/or structures.

The angle of a water line and sewer line crossing shall be limited to between forty-five (45) degrees and ninety (90) degrees from parallel. Intersection angles of less than forty-five (45) degrees shall not be permitted.

Water lines and sewer lines shall not be constructed within a common trench.

For the purposes of this section, the term "lines" shall include mains, laterals, and service lines for both water and sewer.

- A. Separation of Water and Gravity Sewer Lines: When water and sewer lines are laid parallel to each other, the horizontal distance between the water and sewer lines shall be at least 10 feet. Each line shall be laid in a separate trench.

When physical conditions, such as an existing obstruction, do not allow the required ten (10) foot horizontal separation, the water and sewer lines may be laid as close as five (5) feet if the bottom of the water line is at least 18 inches above the top of the sewer line.

If these requirements cannot be met, extra protection shall be required per section TP-01.08.G.

When water lines cross sewer lines, the water line shall be above the sewer line with no less than 18 inches vertical clearance.

Where a water line must cross under a sewer line, a vertical clearance of at least 18 inches between the bottom of the sewer line and the top of the water line shall be maintained. The water line shall be the normal water distribution pipe as specified on the construction drawings, with a 20 foot pipe section centered on the sewer crossing. New water and sewer lines being installed that are crossing, shall be arranged so that the pipe line joints of both the water and the sewer are equidistant and as far as possible for each line's joints.

If these requirements cannot be met, extra protection shall be required per section TP-01.08.G.

- B. Separation of Water and Pressurized Sewer Lines: Water lines shall not be placed within ten (10) feet horizontal and within three (3) feet vertical above or below a pressurized sewer line.

Extra protection, as described in section TP-01.08.G, shall be required where a water line is placed within ten (10) feet and within three (3) feet vertical above a pressurized sewer line.

Extra protection, as described in section TP-01.08.G, shall be required where a water line is placed within ten (10) feet horizontal and any distance below a pressured sewer line.

- C. Service Line Separation: Water and sewer services shall meet the horizontal separation requirements listed above, except where water and sewer services unavoidably must enter the building with less than 10 foot separation, the services shall diverge to achieve the required separation within 10 feet of the building wall. Water and sewer services crossing other service or mains shall meet the vertical separation requirements listed above.

If these requirements cannot be met, extra protection shall be required per section TP-01.08.G.

- D. Water Main Separation from Sewer Manholes: No water pipe shall pass through, under, or come into contact with any part of a sewer manhole and shall be separated ten (10) horizontal feet from the closet edge of a sewer manhole.

If these requirements cannot be met, extra protection shall be required per section TP-01.08.G.

- E. Separation between Water Lines and Components of the Sewage Disposal System: Water lines shall not be installed within ten (10) feet of a septic tank, within 25 feet of a septic drainfield, or 50 feet from an outhouse. Also, waterlines shall not be installed within 100 feet of the perimeter fence of an individual lagoon, or within 500 feet of the perimeter fence of a community lagoon.

- F. Extra Protection: When separation between water lines and sewer facilities cannot be accommodated, extra protection shall be required. Prior to the use of these extra protection measures, approval must be obtained in writing from the Owner.

New water lines that require extra protection from new sewer lines, shall have extra protection provided by using ductile iron pipe for one or the water and sewer lines. Lines of standard pipe length shall be centered at the point of crossing so that no joints exist within six (6) feet horizontal and only restrained or mechanical joints exist within 15 feet horizontal.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line shall be encased in 6 inches around the circumference of the pipe of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal to ensure a water tight seal.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line:

1. shall be reconstructed using a standard length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal, this shall include providing the necessary sewage by-pass means during construction as needed to prevent obstructing sewage flow in the existing line or.
2. shall be encased in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.

Existing water lines that require extra protection from new sewer lines shall provide for extra protection by:

1. constructing the new sewer line and reconstructing the existing water line using ductile iron pipe for both lines with standard pipe lengths centered at the point of crossing so that no joints exist within six (6) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
2. encasement of both the existing water line and the new sewer line in six (6) inches of concrete for the horizontal distance of the lines that require extra protection but for a distance no less than ten (10) feet horizontal.
3. Extra protection for existing ductile iron water lines shall be met by the installation of restrained or mechanical joints on the existing water line within ten (10) feet horizontal of the crossing and either
 - a) construction of new sewer line using a standard pipe length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
 - b) encasement of the new sewer line in six (6) inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.

Encasement of either the water lines or the sewer lines may be encased in a watertight carrier pipe that extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be made of materials approved by the Owner or Owner's representative.

Installation of additional pipe or fittings or concrete for extra protection as required by the pipe alignment shown on the plans shall be incidental to the respective water or sewer line construction. Payment for unexpected utility crossings that require extra protection shall be negotiated between the Contractor and the Owner.

TP - 01.11 BACKFILLING:

Trenches shall not be backfilled until the Owner or Owner's Representative has inspected and approved the pipe installation and jointing as being in compliance with the requirements of plans and specifications.

- A. Trenches and Pipes: Bedding and backfill materials to a depth of 12 inches above the pipe shall be carefully deposited in layers not more than six (6) inches thick (loose measurements), wetted to optimum moisture content, and hand or mechanically compacted to at least 90% of the reference density for this material as described herein. Soil used for this bedding and initial backfill shall meet the requirements set forth herein. The excavation material shall be placed in layers not to exceed 12 inches and compacted to the density specified in section TP-01.11 from 12 inches above the pipe to ground surface. Final backfill shall be left in a uniform, neat condition matching the surrounding grade.

- B. Structures: Backfill materials shall be placed gradual and even to prevent tipping. Backfill shall be placed around structures with lifts not exceeding 12 inches and compacted to the density specified in TP-01.11. Backfill material shall meet the specifications identified herein. Generally, compact the fill in the same manner as the standard trench procedure. Backfill compaction equipment should be suited for site conditions to avoid damage to installed structures.

Wherever trenches or surrounding structures have not been properly filled, or if settlement occurs, they shall be reopened to the depth required for proper compaction and refilled and re-compacted as specified and approved by the Owner or Owner's Representative at the Contractor's expense.

Compaction methods and equipment may utilize hand and mechanical tampers and rollers. The equipment and procedures proposed by the Contractor shall be subject to the approval of the Owner or Owner's Representative.

- C. Materials: All backfill material shall be approved in advance of installation by the Owner or Owner's Representative. Materials shall be obtained from areas approved by the Owner or Owner's Representative.

Backfill material will not be paid for separately, but shall be considered as subsidiary to and a part of the cost for the applicable contract bid item.

1. Embedment: Embedment is that material from the bottom of the trench to 12 inches above the pipe, and includes the pipe bedding material (upon which pipe is placed), haunching material (extending from pipe bottom to pipe centerline), and initial backfill material (extending from pipe centerline to 12 inches above pipe). Native soil used for embedment must be free from clods of earth or stones larger than 3/4 inch in any dimension, organic refuse, debris, frozen soil, and other objectionable material. If native soil does not meet this criteria and cannot be screened to this criteria, the Contractor shall use imported material.
2. Imported Bedding Material: If required, special bedding material shall consist of sand, sandy gravel, or other suitable granular material having a maximum plasticity index of 6, with 100% of the bedding material smaller than 3/4 inches, and no more than 5% passing a No. 200 sieve.
3. Stabilization: Granular stabilization material shall be used to replace soft, spongy, or other unsuitable material, including rock encountered in excavation, to the depths necessary to support the pipe or structure. Stabilization materials shall be underlay bedding material (as applicable) and shall consist of suitable hard, durable granular material having a maximum size of 6-inches, graded so that a maximum of 20% passes a No. 4 sieve. Granular stabilization is not anticipated. If required, a price for granular stabilization shall be negotiated between the Contractor and the Owner.
4. Final Backfill: In general, final backfill will be that material originally excavated from the trench and will extend from 12 inches above the pipe to surface grade. Final backfill material shall be the same as that around the pipe except that the inclusion of a limited amount of stones up to 6 inches in diameter will be permitted.

- D. Placement:

1. Embedment: Embedment shall be placed in 6-inch loose lifts and compacted as described herein. If over-excavation is required, bedding material is to be compacted to 90% of the maximum dry density as determined by the Standard Proctor density test (ASTM D-6938). Haunching material shall be placed by hand and worked under the pipe haunch to provide adequate side support for the pipe. Haunching and initial backfill material shall be compacted to 90% of the maximum dry density as determined by the Standard Proctor density test (ASTM D-6938). Care shall be taken to ensure that the pipe is not supported by the bells of the pipes.
2. Haunching: Haunching is the material from the bottom of the pipe to the center line of the pipe. The

same material used for bedding the pipe shall be used for haunching. After the jointing is completed and the pipe has been approved by the Owner, the haunching material shall be placed by hand and worked under the pipe haunch to provide adequate side support for the pipe. The haunching shall be compacted to 90% of the maximum dry density as defined in TP 1.10. Placement and compaction of the haunching shall be achieved so as to avoid damage to or displacement of the pipe.

3. Initial Backfill: Initial backfill is the material from the spring line of the pipe to 12 inches above the top of the pipe. The same material used for bedding the pipe shall be used for the initial backfill. The initial backfill shall be compacted to 90% of the maximum dry density as defined in section TP-1. 10. The Contractor shall carefully place and compact the initial backfill in such a manner that damage to or displacement of the pipe does not occur.
4. Final Backfill: Final backfill shall not be placed until the embedment material is placed and compacted to 85% of the maximum dry density as defined in section TP-1. 10, and the Owner or Owner's Representative have inspected and approved the installation. Final backfill shall be placed in lifts not to exceed 12-inches unless otherwise approved by the Owner or Owner's Representative. Compaction shall be as defined in the Compaction Requirements, Methods, and Testing section.
5. Backfill for Road Subgrade: Under existing and proposed roadways, to a distance of 10-feet on either side of the road, bedding and backfill materials shall be carefully deposited in layers not more than 6-inches thick, loose measurements, wetted to optimum moisture content and mechanically compacted as described in the Compaction Requirements, Methods, and Testing section. If applicable, the Contractor shall comply with local, municipal, county, state, and federal highway authority's roadway subgrade standards.
 - a) In areas where pavement is to be replaced, or in roads that are to be paved, remove cobbles that may interfere with subgrade preparation. This shall include the backfill within 12 inches of the finished subgrade elevation. The upper 12 inch layer, forming the subgrade for pavements, shall be compacted to a density of at least 95% (ASTM D-698 - Standard Proctor Test). See Section 11 of the Technical Provisions where this is required.
 - b) Cement slurry can be substituted for compacted native backfill and subgrade if approved by Owner or Owner's Representative. The cement slurry shall consist of one sack of cement to one cubic yard of concrete sand and shall be placed from the concrete truck at a slump of 6 to 8 inches. Steel plates 5/8 inch thick are to be placed over the trench with at least 6 inches overlap on each side and edged with asphalt to prevent traffic movement. The concrete slurry shall be allowed to set for a minimum of 12 hours before completing the asphalt patch. Slurry can typically be installed from the trench bottom to ground surface and no intermediary subgrade material is required for placement of asphalt patch.
6. Where trenches cross roads, streets, or driveways, backfilling shall be completed immediately following excavation and inspection. No trenches across roads shall remain open overnight. All crossings shall be backfilled, compacted and open to traffic at the end of each day's work. Major road crossings shall be excavated and backfilled in half widths of the traveled way so that at least one-half of the roadway is open to controlled traffic at all times during the work.
7. Backfill Around Structures: Backfill around structures shall conform to the same requirements as those for backfill around piping in unpaved areas, unless more stringent requirements are indicated in other sections of these specifications.

TP - 01.12 COMPACTION REQUIREMENTS, METHODS AND TESTING:

- E. Minimum Density: Unless otherwise specified by applicable permits initial and final backfill and gravel

resurfacing shall be compacted to the following minimum requirements. The minimum acceptable percent of compaction is the in place dry density divided by the reference density times 100. Compacted soil shall also be at plus or minus 2% of optimum moisture content.

TYPE	LOCATION	REQUIRED COMPACTION
I	Under any existing or proposed pavement, curb, gutter, sidewalk, roadway, shoulder, alley, slab, footing, canal embankment, or when within 5 feet of the above.	95%
II	Within any gas, electric, or telephone utility easement, or within any street or road right-of way outside the limits defined above as Type I.	90%
III	All other locations not defined above as Type I or Type II.	85% (or 100% of adjacent natural ground)

F. Reference Densities/Baseline Testing: The Contractor, at his expense, shall provide the reference densities for the various bedding and backfill materials used. All tests shall be performed by a certified soils testing laboratory approved by the Owner or Owner’s representative. If reference to natural ground is used, a nuclear gauge may be used to measure the density of the natural ground.

The reference densities for compaction tests shall be established in accordance with ASTM D-698, Standard Proctor Test. The Contractor shall submit for approval a testing plan identifying proposed testing locations prior to the start of any excavation work. Contractor shall provide copies of the Modified Proctor Tests with 5 point minimum moisture versus density curves.

The Contractor shall coordinate the collection of soil samples for proctor testing with the Owner or Owner’s Representative such that both parties are on-site during the collection of soil samples. This will ensure that enough samples are collected to provide for accurate density testing during construction by providing reference density for differing soil conditions within the project area. Should a change in soil be encountered at any point of the installation, a new sample shall be taken and additional test shall be conducted.

G. Methods: Mechanical compaction is permitted. Water jetting methods are not permitted. The backfill shall be uniformly moistened to optimum moisture content, placed in sufficiently thin layers to obtain the specified results, and compacted with hand and/or pneumatic tamp, roller, hydrohammer, or other device which will obtain the specified density without injury to the pipe or related structures.

H. Density Tests: Backfill density tests shall be performed in accordance with the latest versions of ASTM D-1556 (Sand Cone Method), ASTM D-2167 (Rubber Balloon Method), ASTM D-2216 (Moisture Content), ASTM D-2922 (Nuclear Density), and ASTM D-3017 (Nuclear Moisture Content). The Contractor will perform initial field density tests for each location listed in the next paragraph at the expense of the Contractor. Results of the test shall be provided to the Owner and approved prior to continuing. Any additional tests due to failure of initial tests shall be at the expense of the Contractor.

I. The Contractor will perform at compaction tests a frequency of one test per 150 lineal feet of water main trench and water service trench. Test locations shall be designated by the Owner’s Representative. The Owner may request performance of additional tests at the Owner’s expense.

If the results of any of the compaction tests indicate insufficient compaction, the area in question shall be reopened to a depth required for proper compacting, then refilled, compacted and retested, at the expense of the Contractor, until the compaction tests indicate that the necessary compaction requirements have been met. Two copies of the test results of any retesting performed by the Contractor shall be provided to the Owner, for his approval, prior to any permanent surfacing. Any improperly placed backfill, or

locations where settlement occurs, shall be reopened to the depth required for proper compaction, then refilled and compacted at the expense of the Contractor. The surface shall be restored and resurfaced, if necessary to the required grade.

TP - 01.13 ROADWAY RESTORATION AND PATCHING:

Whenever existing roadways or driveways are disturbed during the normal course of construction, the Contractor shall restore the roads and driveways to their original condition. Surfacing shall be replaced where the roadway has gravel, concrete or asphaltic surfacing. The Contractor shall comply with the standards and construction requirements of the applicable local, municipal, county, state and federal highway authorities, as noted on the plans, special provision or exhibits/crossing permits in this contract. The Contractor shall observe all prescribed traffic safety regulations.

- A. Repair of the road shall be complete with adequate subgrade compaction and acceptable restoration of the roadway surface, as specified herein. No scarring of pavement will be allowed from excavation equipment tracks, outrigger shoes or other stabilizers.

Gravel used in regrading and road base shall be well graded and conform to the following:

SIEVE SIZE	% PASSING
1-1/4	100
#4	38-65
#8	25-60
#30	10-40
#200	3-12

- B. All cuts in the pavement between pavement that is to remain and pavement that is to be removed shall be cut straight leaving a clean regular and vertical edge. This edge shall be protected throughout the work, or shall be re-cut before placing the final surfacing material. After the pipe is installed, compacted backfill shall be placed to within 9 to 12 inches of the level of the roadway surface, as applicable.
 1. Reinforced Concrete Patch: Compacted aggregate base course, six inches in depth, shall be placed in the roadway immediately beneath the concrete patching. The cut shall be filled with a six inch thick reinforced concrete patch. Concrete shall meet the requirements of Section 02-Concrete. The reinforcement shall be #6 welded wire reinforcement mesh (6-inch by 6-inch). The concrete patch shall be a minimum of four feet wider than the top of the trench and centered over the trench. The Contractor shall notify the Owner at least 48 hours before concrete is poured to allow the Owner or Owner's Representative to inspect patch preparation.
 2. Asphalt Patch: Compacted aggregate base course, six inches in depth, shall be placed in the roadway immediately below a bituminous wear course. Asphalt mix surfacing conforming to ASTM D-3515 (Hot-Mixed, Hot Laid Bituminous Paving Mixtures) shall be placed and compacted to a 3-inch depth to make the crossing level with the existing roadway. Cold mix is not permitted.
 3. Regrading: Where regrading is required after crossing of the existing roads or driveways, the Contractor shall remove existing gravel surfacing, stockpile the material, and restore the road surface

after installation of the pipe. The stockpiled material shall be used for backfilling to within two inches of finished level. The final two (2) inches of gravel surfacing shall conform to the requirements of gravel for re-graveling as listed above. This material shall be placed only in the amount and at the locations designated by the Owner or Owner's Representative. All quantities shall be verified by the Owner or Owner's Representative during placement of the gravel.

TP - 01.14 DISPOSAL OF EXCESS MATERIAL:

Excess material, including rock, broken concrete, bituminous materials, debris, or other materials not suitable for backfill, shall be removed from the site and wasted in the disposal areas selected by the Contractor and approved by the Owner or Owner's Representative.

The disposal of such excess materials will not be paid for separately, but shall be considered as incidental to and a part of the cost for the applicable contract bid item.

TP - 01.15 CLEAN-UP:

Upon completion of the work, the entire site shall be cleared of all debris, and ground surfaces shall be finished to smooth, uniform slopes, and shall present neat and workmanlike appearance. All slopes shall be trimmed and dressed, and all surfaces graded such that effective drainage is assured. Unpaved streets shall be graded smooth to the satisfaction of the Owner or Owner's Representative.

TP - 01.16 TRENCH MAINTENANCE:

The Contractor shall, for a period of one year after completion and final acceptance of the work, maintain, and repair any trench settlement that may occur and shall make suitable repairs to any pipe, pavement, or other structures that may become damaged as a result of backfill settlement.

TP - 01.17 STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

For surface disturbances greater than one (1) acre in size the Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the latest requirements of the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Large and Small Construction Activities. The SWPPP must be prepared in accordance with good engineering practices and must 1) Identify all potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site; 2) Describe practices to be used to reduce pollutants in storm water discharges from construction site; 3) Assure compliance with the terms and conditions of the NPDES General Permit.

If the Contractor is not experienced in the preparation of SWPPP, the Contractor shall retain the services of a sub-consultant regularly engaged in the preparation of SWPPP to perform said service. The completed SWPPP must be approved by the Owner or Owner's Representative at least 10 business days before the start of construction so that a Notice of Intent can be sent to EPA. The Contractor shall fully implement the SWPPP from the commencement of construction until final stabilization, as defined in the NPDES General Permit is achieved.

The Contractor shall maintain and update the SWPPP, as required in the NPDES General Permit, for the life of the project. Updates shall include amendments required as a result of the ineffective controls discovered through the course of inspections or investigations conducted by the Owner or Owner's Representative, site staff, or by local, state, tribal or federal officials. The Contractor shall submit a Notice of Intent to EPA to obtain permit coverage, modify the coverage as necessary, and terminate permit coverage once final stabilization is achieved.

TP - 01.18 LINES AND GRADES:

The Owner or Owner's Representative will give all lines, grades and building locations on the plans and will supply the Contractor with the AutoCAD drawing to stake out the facilities to be installed. The Contractor shall be responsible for staking out pipeline centerlines with a lath every 100 feet or line-of-sight whichever is less. Bends, alignment, intersections, manholes, lift station centers and fence corners shall be staked by the Contractor and provided with two offsets for alignment. Elevation references will be provided as shown on the plans, for sewer lines, lift stations, vaults, tanks, sewer manholes, and other facilities where elevations are critical to the performance of the system. The Contractor shall be responsible for the preservation of the location and line and grade stakes when set, and if disturbed, shall have such stakes replaced.

TP - 01.19 CLEARING AND GRUBBING:

It is the Contractor's responsibility to clear and grub the site prior to or during construction. The Contractor shall remove all trees along the water and sewer main alignments in accordance with Tribal and local regulations. Proper approvals must be obtained as necessary prior to removing and disposal of trees and vegetation. Trees may either be chipped with a wood-chipper and placed over the trench for erosion control or disposed of at the Contractor's expense. Clearing and grubbing shall be subsidiary to other bid items and no separate payment will be made.

TP - 01.20 SEEDING:

All disturbed areas shall be returned to their pre-construction vegetative state. The Contractor shall submit a seed mix that is equivalent to state highway or local road authority's approved seed mix. The Contractor shall protect the seed after it is placed with a tackifier, hay mulch, straw mulch, wood cellulose mulch, or as approved by the Owner. A minimum of 20 pounds of seed per acre shall be placed. Seed shall be placed by either drill seeding at a depth of approximately one (1) inch or broadcast seeding. If broadcast seeding is utilized, the Contractor shall apply twice the minimum seeding rate (i.e., 40 pounds of seed per acre). The Contractor shall perform maintenance as needed to ensure that adequate vegetative growth and stabilization has taken place to minimize erosion after construction is completed.

TP - 01.21 FINISH GRADING:

After the structures have been constructed and installed, all piping installed, all required compaction and density testing has been performed and all backfilling and embankments have been completed, areas on the site of the work shall be brought to the true grades. All slopes shall be trimmed and dressed, and all surfaces graded such that effective drainage is assured.

TP - 01.22 AS-BUILT DRAWINGS:

The Contractor shall be responsible for keeping accurate records of all installed items under sections of the Technical Provisions package. These records shall indicate revisions changes ("red-lines") of the construction drawings in sufficient detail to be accepted by the Owner or Owner's Representative for as-built drawings.

Sufficient detail under this contract means that the Contractor shall take accurate measurements and record them on the drawings to provide the minimum information of at least two swing ties and distances to permanent objects. These permanent objects shall include but not be limited to all: valves, pressure reducing valves, air and vacuum valves, hydrants, connections to other lines, bends, marker posts, manholes, fence corners, inspection ports, water and sewer tapping points, cleanouts, intersection with other utilities, connection to existing utilities or home, roadway crossing locations, abandoned facilities, and depths of noted facilities; the beginning and end of any stabilization material placed; the beginning, end, and depth of rock encountered; the beginning, end, and depth of any encasement installed; and the location and depth of any each utility encountered. Further information on as-built drawings may be contained in the Supplemental Technical Provisions.

The recording of the as-built drawings information is considered an integral part of the progress of this construction and shall be reviewed with the Owner and Owner's Representative in determining progress under this contract. As-built drawings shall be submitted by the Final Inspection and before final payment can be made.

SECTION 04 - WATER TRANSMISSION AND DISTRIBUTION MAIN

TP - 04.01 SCOPE:

The work covered by this Section consists of furnishing all labor, equipment and materials in connection with the construction of water mains, including piping, valves, hydrants, other appurtenances and connection of the water mains to the structures for community water systems, all installed in strict accordance with the plans and technical provisions.

TP - 04.02 GENERAL:

The waterlines shall be constructed in the locations and of the sizes, materials and pressure class shown on the drawings, or as directed by the Owner or Owner's Representative. All permits, permissions or other authorizations required by the tribal or municipal utility authority for tapping and connection are the responsibility and cost of the Contractor. Excavation, trenching, backfilling and any needed dewatering shall be in accordance with Section 01 of these Technical Provisions. Staking, utility locates and existing system abandonment shall be conducted in accordance with Section 01 of these Technical Provisions.

Pipe joints, fitting and appurtenance installation shall be in accordance with the manufacturer's recommendations. All pipes and joints shall be approved by the Owner or Owner's Representative prior to backfilling. The work will not be accepted until satisfactory backfilling, compaction, testing and cleanup is complete. Final grading should prevent surface water runoff from pooling around installed facilities. If the work does not meet the specified requirements of this Section, the Contractor shall remove and replace and re-test, as necessary, at the Contractor's expense. The Contractor shall leave each premise in a neat and orderly condition, restoring it as near as possible to its original condition and to the approval of the Owner or Owners' Representative.

TP - 04.03 MATERIALS:

Materials shall be inspected to verify that they meet these specifications and match the approved submittals. Materials not meeting these requirements shall not be permitted to be installed. Install all materials and equipment in strict accordance with the manufacturer's recommendations, applicable codes and regulations, and these specifications.

The unloading, handling, and storage of the pipe and materials shall be conducted in a safe manner. Handle pipe with padding between metal machinery and pipe. Keep dirt and foreign material away from pipe interiors and sealing surfaces. Lower pipe carefully into the trench without dropping, rolling or dumping the pipe.

- A. General: Inspect all materials prior to installation to ensure that they are in new condition. Ensure that pipe, fittings and materials are free from defects and damage at the time of delivery and prior to installation in the trench. Plastic pipe with scratches, gouges, or grooves deeper than 10% of the wall thickness or ultraviolet discoloration shall be rejected. Remove all materials from site that are defective, damaged, used, unsound, or that otherwise do not meet the specifications within 24-hours of discovery.
- B. Pipe: All pipe shall be listed under the National Sanitation Foundation (NSF) Part 61. The standard pipe length shall be 20 feet. Each length of pipe shall be clearly marked with the following: Manufacturer, Nominal Pipe Size, PVC Cell Classification, Type PSM PVC Sewer Pipe, ASTM Designation and Pipe Class.
 1. Polyvinyl Chloride Pipe (PVC): PVC pipe shall meet the requirements of NSF 14.
 - a) PVC Pipe and Fittings (2-inch): PVC pipe shall be SDR 21 (200 psi). Each joint of pipe shall carry the NSF seal of approval for pipes for potable water. Pipe shall conform to ASTM D2241 and ASTM D1784. Fittings shall be 2-inch SDR-21 gasketed fittings with the PVC material

conforming to ASTM D1784, NSF 14, joints conforming to ASTM D3139, and gaskets (elastomeric seals) conforming to ASTM F477.

b) PVC Pipe and Fittings: PVC pipe and joints shall conform to the requirements of ANSI/AWWA C900 DR 18 DR18 Class 235 (minimum), Standard for Polyvinyl Chloride (PVC) Pressure Pipe, with gaskets meeting ASTM F477 joints conforming to ASTM D3139, and gaskets (elastomeric seals) conforming to ASTM F477 or as otherwise defined on the Bid Schedule.

2. Ductile Iron Pipe (DIP): All ductile iron pipe shall be manufactured in accordance with the requirements of ANSI/AWWA C151/A21.51 for centrifugally cast ductile iron pipe. Pipe shall be manufactured in accordance with ANSI/AWWA C111/A21.11 for rubber gasket joints for ductile iron pressure pipe and fittings.

a) Pipe thickness shall meet the requirements of ANSI/AWWA C150/A21.50 for thickness design of ductile iron pipe.

b) Pipe shall be cement mortar lined and seal coated meeting the requirements of ANSI/AWWA C102/A21.4 for cement mortar lining for ductile iron pipe and fittings for water.

c) Pipe shall have push-on joints, unless otherwise indicated on the plans or in the Bid Schedule.

3. High Density Polyethylene Pipe (HDPE): All HDPE used in constructing the water main shall conform to Section 28 of these Technical Provisions.

C. Ductile Iron Fittings: Ductile iron fittings shall meet ASTM A536, 350 psi pressure rating for 2-inch to 24-inch diameter fittings in accordance with ANSI/AWWA C153/A21.53. Ductile and gray iron fittings shall conform to AWWA C110 and AWWA C111. Fittings shall have factory applied epoxy coating and lining and shall have stainless steel fasteners with anti-galling compound applied to the threads. Refer to manufacturer's recommendations for allowable deflection of fittings.

1. Fittings shall mechanical joint (MJ) or flanged if shown on the drawings. Gaskets shall be styrene butadiene rubber (SBR) meeting ANSI/AWWA C111/A21.11. Fittings shall be listed under the National Sanitation Foundation (NSF) Part 61.

D. Mechanical Joint Restraint:

1. General: Mechanical joint restraints shall be manufactured of DI in accordance with ASTM A536 with the following additional requirements or exceptions. Joint restraint thrust bolts and nuts shall be $\frac{3}{4}$ " low alloy (mild) steel. Mechanical joint restraints shall be incorporated into the design of a follower gland. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts in accordance with AWWA C111 and C153. A fully restrained joint shall have the same working pressure rating as the pipe itself.

2. Design: The restraint mechanism shall consist of numerous individually activated gripping surfaces to maximize restraint capability. The gripping surfaces shall be wedges that are designed to spread the bearing surfaces on the pipe. Twist-off nuts, sized the same as tee-head bolts, shall be used to ensure the proper actuating of restraining devices. When the nut is sheared off, a standard hex nut shall remain.

3. Pressure Rating: The mechanical joint restraint device shall be as listed below:

E. Gate Valves: Gate valves shall conform to the latest revision requirements of AWWA C509 or C515 for resilient-seated gate valves. All valves shall be equal to the AVK Series 25 or 65 or the American Flow Control Series 2500, or approved equal.

1. General:

- a) Gate valves shall be of cast iron or ductile iron body construction, bronze mounted, solid wedge, resilient seal, with a 2-inch square stem-operating nut, 200 psi operating pressure or higher, counterclockwise opening, inside screw, with O-ring seals. Valves shall be MJ ends and shall have stainless steel fasteners with anti-galling compound applied to the threads. Refer to manufacturer's recommendations for allowable deflection of fittings.
 - b) The Contractor shall provide to the Owner, at no additional cost, one gate valve wrench 6 foot long with "T" handle.
 - c) Mechanical restraint joints shall be used unless otherwise indicated.
 - d) When a valve is required near a fitting, such as a tee, the valve shall be secured with mechanical joint restraints to the fitting.
- 2. Markings: The name, monogram or initials of the manufacturer shall be legibly cast on the valve body. The make of valves furnished shall be easily identifiable by catalog numbers.
 - 3. Valve Stems: All valves shall be furnished with valve stems made from 300 or 400 series stainless steel and shall be non-rising stems (NRS).
 - 4. Lining: All interior ferrous surfaces exposed to fluid flow shall be epoxy coated to a minimum dry film thickness of 6 mils. Epoxy linings shall be factory applied by an electrostatic or thermosetting process in accordance with the manufacturer's printed instructions. The epoxy materials used shall be 100% powder epoxy or liquid epoxy that conforms to the requirements of AWWA C-550.
 - 5. Coating: All exterior ferrous surfaces, except finished or bearing surfaces, shall be factory coated with epoxy as required above for interior surfaces.
- F. Gate Valve Boxes: All gate valves shall be provided with a 5¹/₄-inch inner-diameter shaft, 2-piece sliding extension type cast iron valve box. The gate valve box shall be Tyler Union 6855 Domestic Heavy Duty, Mueller H 10364 or approved equal.
- 1. General:
 - a) All boxes shall extend from the body of the valve to the finished grade.
 - b) The vertical column of the box shall be designed so that the top section may be adjusted while in position.
 - c) The cast iron lid shall be 5-1/4" Domestic Heavy Duty Drop Lid with a pentagon nut and the word "WATER" cast on the lid.
 - 2. For the concrete collar, the concrete shall conform to Section 02 of the Technical Provisions and the reinforcing steel shall conform to Section 03 of the Technical Provisions.
 - 3. Extension stems: When the valve operating nut is more than four feet below the top of the valve box, stainless steel extension stems equal to TROY VALVE Stainless Steel Valve Extension Stems shall be provided. The top of the extension shall be 3 ¹/₂ to 4 feet below the top of the valve box.
- I. Tapping Sleeves: Tapping sleeves shall be stainless steel with mechanical joint seals and class 125 outlet flange, Mueller H-304SS, or approved equal.
- K. Markers and Bollards: Markers and Bollards shall be in accordance with Section 01 of the Technical Provisions.
- L. Filter Fabric: Class A 6 oz. nonwoven or woven polypropylene or polyester fabric.
- M. Fire Hydrants: Conform to AWWA C502.
- 1. New hydrants shall conform to the requirements of AWWA C502 (AWWA Standard for Dry Barrel Fire Hydrants).

2. Unless otherwise indicated, the hydrants shall be equipped with two National Standard 2 1/2-inch hose nozzles and one National Standard 4 1/2-inch pumper nozzle.
3. The hydrant inlet connection shall be sized for a 6-inch pipe. The hydrant valve shall open against line pressure and shall be no less than 4 1/4 -inches.
4. The bury depth shall be adequate to maintain the minimum cover over the pipe (TP-4.04.C).
5. The hydrant shall be designed so that all renewable parts can be changed without digging up the hydrant.
6. Hydrants shall be equipped with traffic safety flanges designed to break away in the event of horizontal impact.
7. The operating nut and nuts on each hydrant cap shall be 1 1/2-inch National Standard pentagon nuts. Direction of opening shall be counterclockwise, as shown by an arrow cast on the hydrant.
8. Exterior shop coating of the hydrant top section shall be chrome yellow.
9. The hydrant shall have weep holes to allow the hydrant to drain, unless directed otherwise by the Owner's Representative.
10. Concrete shall conform to Section 02 of the Technical Provisions and reinforcing steel shall conform to Section 03 of the Technical Provisions.
11. Acceptable models: Mueller Super Centurion 250, Waterous (American Flow Control) WB-67, or approved equal.

N. Imported Pipe Bedding: Water mains and fittings shall be bedded with imported material as shown in the details.

TP - 04.04 PIPE CONSTRUCTION REQUIREMENTS:

Trenching, backfilling and compaction operations shall be performed as specified herein. Pipe and fittings shall be installed in accordance with the manufacturer's printed specifications and instructions, to the standards of AWWA for installing the type of pipe used.

A. General:

1. Install water mains and appurtenances in the locations and of the sizes and materials shown on the drawings and Bid Schedule.
2. Pipe, fittings, valves, and hydrants shall be carefully handled to avoid damage.
3. Contractor to provide staking in accordance with Section 01 of these Technical Provisions.
4. Locating existing utilities shall be the responsibility of the Contractor in coordination with a representative from the operating utility.
5. Existing water mains will be properly abandoned in place and all facilities located at ground surface shall be removed and disposed of at the Contractor's expense.

B. Pipe Protection:

1. No pipe shall be laid when trench or weather conditions are unsuitable for such work.
2. Under no circumstances shall pipe be laid in water. Trenches shall be kept free from water at all times.
3. The interior of all pipe shall be thoroughly cleansed of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by use of plugs or other approved devices.

4. As the work progresses, the interior of the pipe shall be cleared of all dirt and superfluous materials of every description.
 5. Promptly remove all debris that enters the pipeline and swab the area with 1% hypochlorite solution.
 6. At all times when work is not in progress, all open ends of pipe and fittings shall be securely closed with a water tight plug so that no trench water, rodents, earth, or other substances will enter the pipe or fittings.
- C. Pipe Installation:
1. All pipe shall be laid to the depth shown on the drawings, or at such depths as may be established by the Owner or Owner's Representative in order to connect the new pipe to the existing water mains.
 2. Unless otherwise specified, the pipe shall be laid to a depth that will provide for a cover of at least 4 feet from the top of the pipe to finished grade.
 3. Each section of pipe shall rest upon compacted bedding materials, with recesses excavated to accommodate joints.
 4. When trench bottom is soft and cannot support the pipe, a further depth and/or width shall be excavated and refilled to grade with stabilization and bedding material as specified in Section 01 of these Technical Provisions.
 5. Joints with pipes of differing materials shall be made with appropriate adapters approved by the Owner or Owner's Representative, but in no case will threading of the PVC pipe wall be allowed.
 6. Where required, PVC pipe shall be cut square using a powered cutoff saw, carpenter's fine tooth handsaw, or hacksaw. Once cut, the pipe shall be machine or hand beveled to give a one-half inch tapered end.
- D. Pipe Deflection:
1. Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflecting the joints.
 2. The amount of deflection at each pipe joint shall not exceed the manufacturer's printed recommended deflections.
 3. When rubber gasketed pipe is laid on a curve, the pipe shall be jointed in a straight alignment and then deflected to the curved alignment. Trenches shall be made wider on curves for this purpose.
 4. Any pipe that has its grade or joint disturbed after laying shall be taken up and relayed.
- E. Backfill and Acceptance:
1. The Contractor shall make every effort to backfill all excavation by the end of each workday.
 2. Work covered by this section will not be accepted until the backfilling, compaction and testing connected with the work has been completed satisfactorily.
 3. Any section of water main that is found to be defective in material, alignment or joints before acceptance shall be corrected to the satisfaction of the Owner's Representative.
 4. Any section of pipe already laid and found to be defective shall be taken up and replaced with new pipe without additional expense to the Owner.

F. Mechanical Joint Restraints: MJ Restraints shall be installed at all bends, caps, tees, crosses, fire hydrants and flush hydrants (blowoff valve assemblies). Pipe joints adjacent to restrained bends and fittings shall be restrained in accordance with the plans and details (Restrained Mechanical Pipe Joint Table in Detail 4A).

1. General:

- a) Mechanical joint restraints shall require conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly as well as allowing joint deflection after assembly.
- b) Proper actuation of the gripping wedges shall be ensured with torque limiting twist off nuts.

2. Thrust Blocks:

- a) Concrete thrust blocks shall not be used unless specified and approved by the Owner or Owner's Representative and shown on the design or detail drawings.
- b) When thrust blocking is approved by the Owner's Representative, concrete blocking shall bear against solid undisturbed earth at the sides and bottom of the trench excavation and shall be shaped so as not to block weep holes or obstruct access to the joints of the pipe or fittings.

3. Special Anchoring Retainer Glands:

- a) Install in accordance with manufacturer's recommendations.
- b) Fully restraint all joints within 20 feet of a fitting with appropriate restraint. Owner or Owner's Representative may specify that an additional restraint be used for pipe sections near critical fittings.

4. Concrete:

- a) Concrete shall conform to Section 02 of the Technical Provisions and reinforcing steel shall conform to Section 03 of the Technical Provisions.
- b) The concrete shall have minimum 28 day compression strength of 3,000 psi.
- c) The concrete shall not cover nuts and bolts of joints or fittings.
- d) Polyethylene wrap shall be placed on fitting bolts to prevent hardening of concrete on connections.
- e) Under no circumstances shall concrete thrust blocks be allowed on vertical bends in lieu of mechanical restrained joints.

G. Warning Tape: Warning Tape shall be installed on all water mains.

H. Tracer Wire: Tracer Wire (including tracer wire access boxes and tracer wire splice kits) shall be installed on all water mains.

TP - 04.06 INTERCONNECTIONS TO EXISTING MAINS:

A. Interconnections:

1. An interconnection is the connection of a new pipeline to an existing pipeline.
2. An interconnection includes excavation, backfill, compaction, tapping sleeve, adapters, mechanical joint restraints, random lengths of pipe and any other supplies and materials required.
3. It does not include connections within the new work or service connections. Only those connections of new water mains to existing water mains which require that the existing main be cut or tapped are considered interconnections.

4. Connections to existing valves, fittings, or pipe ends which have been plugged or capped are not considered interconnections. Removal of the plugs, caps, and thrust blocks is considered incidental to normal installation of the new pipe.
5. Shutoff of mains will not be permitted overnight, over weekends or on tribal or federal holidays.
6. Only start work when all the materials, equipment and labor are on site. Once work on the connection has commenced, it shall proceed continuously without interruption, and as rapidly as possible until completed.
7. Prior to backfilling, visual inspection of joints shall be completed under system pressure in the presence of the Owner or the Owner's Representative. Repair and retest any joint with leakage until no leakage is visible at no cost to the owner. Visually inspect any joints not pressure tested for leakage.

D. Contamination and Disinfection:

1. Great care shall be taken to prevent pipeline contamination when cutting into and making connections with existing pipelines used for the conveyance or distribution of water for domestic or public use.
2. The Contractor shall cooperate with the operating utility in locating services, and shall conduct his/her operations in such a manner that no trench water, mud, or other contaminating substances are allowed to enter the connected line or lines at any time during the progress of the work.
3. Disinfection procedures for connecting to existing mains shall adhere to AWWA C651 Section 4.7, (Disinfection Procedures When Cutting Into or Repairing Existing Mains).
4. The interior of all pipe, fittings, and valves, installed in such connections, shall be swabbed or sprayed with a 1% hypochlorite solution before they are installed, as directed by the AWWA standard referenced above.
5. All fittings and appurtenances removed in the connection process shall remain the property of the operating utility unless specified otherwise.

TP - 04.07 SETTING GATE VALVES AND BOXES:

A. General:

1. Install valves at locations indicated on the plan drawings.
2. Valve installation shall be as per these specifications and as shown on the detail drawings.
3. All valves, including gate valves, air release valves, and blowoff assemblies, shall be set, jointed and restrained to the pipe in the manner as set forth in the AWWA Standards for the type of connecting ends furnished.
4. Before installing the valve assembly, care shall be taken to see that all foreign material and objects are removed from the interior of the valve.

B. Setting Valves and Valve Boxes:

1. Valves and valve boxes shall be set plumb and valve boxes shall be placed over the valve or valve operator in such a manner that the valve box does not transmit shock or stress to the valve.
2. Support gate valves on a 4-inch concrete block set on compacted base during assembly and fully restrain the valve to the water main piping as shown on the detail drawings.
3. Center the valve box over the valve nut.
4. Backfill shall be placed and compacted around the valve box. The valve box shall be maintained plumb and centered over the valve nut during backfilling and compaction.
5. The valve shall be opened and closed to verify that all moving parts are in working order.

6. The cast iron valve box cover shall be set flush with elevated concrete collar or flush with the road surface as shown on the design and detail drawings.

C. Concrete Collar:

1. After installing the gate valve box, the Contractor shall properly compact the area around the gate valve box prior to installing the concrete collar to ensure that there is no settlement.
2. A 32-inch diameter OR a 24-inch square by 4-inch thick reinforced concrete pad shall be poured around each valve box as shown on the plan and detail drawings or instructed by the Owner or Owner's Representative.
3. A tracer wire access box shall be set in the concrete collar and next to the valve box with the tracer wire routed and connected as shown in the detail drawing.
4. Before the concrete has set, the Contractor shall neatly scribe in the concrete pad the size of the valve, material of pipe and orientation of the pipe with two arrows.

D. Valve Markers:

1. For valves outside of the right of way, the Contractor shall install two offset permanent Metal Marker Posts for all water main valves installed under this contract.
2. The marker posts shall be equidistant (4 feet typical) at a 45 degree angle from the valve to the water main.
3. Set marker post with 36-inches of post above grade with label facing roadway and valve between roadway and post.
4. For valves within the right of way, the Contractor shall install a Utility Line Marker to locate the valve. Utility line markers shall meet the requirements of and be installed in accordance with these Technical Provisions.

TP - 04.10 SETTING HYDRANTS:

A. General:

1. Install hydrants and auxiliary valves at the locations indicated on the plan drawings.
2. The hydrant shall meet the requirements of TP 04.03.M. It shall be the Contractor's responsibility to order the correct bury depth hydrant or to inform the Owner or Owner's Representative of the necessity for risers when the need becomes apparent.
3. Hydrant installation shall be as shown on the standard detail drawing.
4. All hydrants shall be tagged or covered until fully operational.

B. Auxiliary Gate Valve and Valve Box:

1. An auxiliary gate valve and valve box shall be located adjacent to the hydrant per the standard detail drawing.
2. The pipe length and material type between the fire hydrant and the auxiliary gate valve and between the auxiliary gate valve and the main shall be as designated on the standard details and plans drawings.
3. Fully restraint joints between the tee and the auxiliary gate valve, and between the auxiliary gate valve and the hydrant.
4. Under no condition shall the pipe and valve diameter be less than 6-inch for fire hydrants, or less than 2-inch for flush hydrants.

C. Installing Hydrant:

1. Hydrants shall stand plumb and shall have their nozzles pointed toward the street or in the direction approved by the Owner or Owner's Representative.
2. The hydrants shall be set so that the bury depth indicator on the hydrant barrel is at final grade.
3. Set hydrant with the breakaway traffic flange at an elevation of 2-inches above finished grade.
4. The hydrant interior shall be free of all dirt or foreign matter before installation.
5. The Contractor shall use a hydrant operating wrench to turn the nozzle cap, pin and lug type hose couplings and hydrant operating nut. The Contractor shall replace any components they damage due to using improper tools.

D. Hydrant Base:

1. Set hydrant on compacted base.
2. A gravel seepage area (drain pit) shall be provided around the weep hole near the hydrant. Gravel shall be installed as per the standard detail drawing. Place gravel from 18-inches below to 6-inches above the weep hole opening.
3. A suitable concrete thrust block shall be constructed at the base of each hydrant in accordance with the drawings. Once the hydrant is set, concrete shall be poured against undisturbed earth in such a manner that the weep hole is kept free from all concrete or mortar. If the weep hole is covered either partially or wholly, the hydrant shall be removed and cleaned and the gravel and concrete removed and replaced with new gravel and concrete.
4. Filter fabric shall be placed above the gravel drain pit as shown on the detail drawing.

TP - 04.12 PRESSURE TESTING:

Pressure testing shall be performed in accordance with these specifications. Use the Pressure Test Form at the end of this section. All water main pipe shall be pressure tested for leaks, including 2-inch pipe that is considered a water main. All pipelines shall be tested for water tightness up to the individual building service meter.

- A. Concrete Thrust Blocking: Where any section of a water line is provided with concrete thrust blocking for fittings or hydrants, the pressure tests shall not be made until at least 48 hours after installation of the concrete thrust blocking, unless otherwise approved by the Owner or Owner's Representative.
- B. Equipment and Scheduling:
 1. Contractor shall provide all necessary equipment, including but not limited to, an appropriate pump, water container, water meter, pressure gauge, valve, and hydrant or corporation stop connection, and shall perform all work required in connection with the tests.
 2. Contractor shall coordinate with the Owner and Owner's Representative so they may witness the entire duration of each pressure test.
 3. Prior to requesting the Owner or Owner's Representative to witness the pressure test, the Contractor shall have all equipment set up completely ready for operation and shall have previously successfully performed the test to verify that the test section will pass.
 4. The Contractor shall notify the Owner or Owner's Representative a minimum of two (2) working days in advance of the date that the Contractor plans to perform the pressure tests.
 5. The test equipment shall be provided by the Contractor and is subject to inspection by the Owner or Owner's Representative.
- C. Procedure: Arrangements for water used in pipeline testing and payment for the water shall be coordinated with the operating utility.

1. Test Preparation:

- a) Pressure gauges used in testing shall be liquid filled and graduated at a maximum in 5 psi increments.
- b) Two gauges will be used simultaneously for verification of the gauges' functionality with one gauge placed at the highest point and one at lowest point of the section being tested.
- c) Prior to the test, the pipeline will be pressured to 10 psi above the test pressure, and then the pressure will be decreased to the test pressure so that gauge responsiveness can be observed.
- d) Each section tested shall be slowly filled with water, with care being taken to expel all air from the mains and service lines, if installed.
- e) If necessary, the pipes shall be tapped at high points to vent the air.
- f) The test pressure shall be 150 psi (measured at the lowest point of elevation in the test section).
- g) No section shall be tested that is greater than 2,500 feet in length or that has greater than 25 psi pressure change due to elevation.
- h) In no case shall the test pressure be allowed to exceed the design pressure for pipe, appurtenances or thrust restraints.
- i) The test shall be conducted in such a manner that existing lines and service user's plumbing is not damaged. Damage caused by testing shall be corrected at the expense of the Contractor.
- j) All connections, blow offs, hydrants, house services up to the meter yoke, and valves shall be tested with the main as far as is practicable.
- k) Air testing of water mains shall not be allowed.
- l) Verify that all fire hydrant lead valves and main valves within the test section are open.
- m) The test shall not begin until the pipe has been filled with water for at least 24 hours to allow for absorption.

2. Performing Test:

- a) The test section shall be slowly filled, at a velocity below 1 ft/s with potable water and all air shall be vented from the line. Install corporation stops at high points, if necessary, to facilitate air removal, and cap off after successful completion of the test.
- b) Pressurize the main to 150 psi as measured at the lowest elevation along the test section.
- c) The test shall have a minimum duration of two hours with the two hour period beginning when the test pressure is attained and the pump ceases operation.
- d) Any time the test pressure drops 5 psi, the pressure shall be restored to full test pressure and the quantity of water used shall be recorded.
- e) The quantity of water required to restore the pressure shall be accurately determined by pumping through a positive displacement water meter with a sweep unit hand registering 1 gallon per revolution.
- f) At the conclusion of the test period, the Contractor shall pump the test section to full test pressure and record the total water used during the test.

3. Method of Water Measurement:

- a) Supply a means of accurate water measurement that is compatible with the pressurizing equipment (e.g. pump and hoses) such as water meter or water container with gradations. The measuring equipment must meet the approved submittal.

- b) The Contractor shall keep a record of all pressure tests.
- c) Minimum information recorded at the time of the test shall include the contract number, contractor name, date, time, stationing or other description of the test section, length and diameter of the test section, total allowable leakage, leakage detected, pass or fail indication and printed name of recorder.
- d) Copies of field pressure tests records shall be submitted to the Owner to show compliance with these requirements before payment is requested.
- e) Add total amount of water required to re-pressurize the line during and at the end of the test and compare with the allowable leakage as calculated in the Pressure Test Form.
- f) Allowable maximum leakage is 0.04 gallons per inch diameter per 24 hours per coupling.
- g) Visible leakage will not be allowed.
- h) All leaks shall be repaired and additional tests conducted until leakages are less than the allowable maximum. All repairs shall be made in a manner approved by the Owner and shall be at the expense of the Contractor.
- i) Disinfection and leak testing may be conducted concurrently.

TP - 04.13 FLUSHING & DISINFECTION OF MAINS:

A. Flushing before Disinfection:

1. Unless the Owner or Owner's Representative approves the Tablet Disinfection Method, the mains shall be flushed prior to disinfection.
2. Flush with potable water to provide 3 volumetric exchanges in the pipeline at a minimum velocity of 3 feet per second.
3. Pig line after flushing if sediment or debris is still visible in the discharge.

B. General:

1. The water mains, fittings and any existing facilities affected by the work shall be disinfected in accordance with AWWA C-651 (AWWA Standard for Disinfecting Water Mains) with water containing a minimum of 25 mg/l of chlorine.
2. This concentration may be obtained by installing temporary gas chlorination equipment, by introduction of a calcium hypochlorite (HTH) solution at several points, or by inserting soluble chlorine tablets in the pipeline as it is laid.

C. Disinfection Methods:

1. Tablet Method:

- a) This method is allowed only with Owner or Owner's Representative concurrence that storage, handling and installation of pipe were completed such that the pipe interior remained dry, clean and void of sediment and debris.
- b) Introduce tablets or granules to produce a free chlorine concentration of 25 mg/l during pipeline installation.
- c) If tablets are used, only those containing pure calcium hypochlorite will be allowed. Tablets containing any kind of stabilizer are prohibited.
- d) Since some stabilizers contain known or suspected carcinogens the Owner or Owner's Representative may require a certification of purity.

- e) Tablets shall be fastened to the top of the pipe with an NSF 61 approved adhesive such as Dow 732. The number of tablets required is given by Table 2, AWWA C-651.

2. Continuous Feed Method:

- a) Feed a chlorine solution into water entering the main such that the water will have a 25-mg/l free chlorine concentration.
- b) Continue feeding until the entire pipeline to be disinfected is filled with the chlorinated water.
- c) At the end of the 24-hours, there must be at least 10-mg/l free chlorine residual as evidenced by residual tests taken at approximately 1,200 foot intervals along the main.

3. Slug Method:

- a) Feed a chlorine solution into water entering the main such that the water will have a 100 -mg/l free chlorine concentration.
- b) Apply the solution continuously and sufficiently to ensure that a column of water with 100 mg/l free chlorine residual is formed in the pipe.
- c) Ensure that all parts of the main and its appurtenances are exposed to the column for at least 3 hours.
- d) Check the residual of the column at 1,200 foot intervals along the main. If it drops below 50 mg/l, inject additional chlorine solution into the entire column such that its residual is raised to 100 mg/l.

For the Continuous Feed & Slug Test Methods, ensure that the chlorine solution is introduced within 10-feet of the end of the section being disinfected and for all cases is being withdrawn or wasted from the most extreme point relative to the point of water introduction. If branches exist, ensure that the chlorinated solution reaches all portions of the branches.

D. Flushing after Disinfection:

1. After at least 24 hours contact time with the disinfection solution, the line shall be thoroughly flushed.
2. Flush chlorinated water in an environmentally safe manner. In no case shall direct disposal to surface water be permitted.
3. Check the chlorine residual at the time of disposal.
4. If disposal to a community sewer system is available, neutralize the chlorine residual if the free residual is above 10 mg/l.
5. If disposal is to the ground surface or ditch, neutralize the chlorine residual if the free residual is above 1 mg/l.
6. Flushing shall continue until all visible debris has been removed and the chlorine concentration is the same as in the existing system, or not more than 0.4 mg/l in a new or unchlorinated system.

E. Bacteriological Testing:

1. After disinfection and flushing, but before the water main is placed into service, the Contractor shall collect two bacteriological samples, 24 hours apart, at the service farthest from the water source for each system or independent extension.
2. The samples shall be forwarded to a State or EPA certified laboratory for water testing and analysis. The laboratory fees, shipping fees, etc. shall be paid for by the Contractor.

3. If the results are negative, the system may be put into service.
4. If either of the samples are positive, the system shall be disinfected again and a samples resubmitted for testing. This shall be repeated until negative results are obtained.
5. Contractor shall provide the Owner or Owner's Representative with documentation of results within 24 hours of laboratory results. Successful (negative) bacteriological test results and the required chlorine residual at the connection point to the existing system will be required prior to acceptance and beneficial use.

PRESSURE TEST FORM: METHOD AND RECORD
(Water Pressure Pipes)

Project: _____ Owner: _____

Location: _____ Date: _____

Project #: _____

Contractor: _____

Inspector: _____

Tester: _____

Test Section Area: _____

Test Section Location: From Station: _____ To Station: _____

(I) CALCULATE ALLOWABLE LEAKAGE (for 2 hour test at 150 psi for PVC):

$$L = \frac{N \times D}{300}$$

L = Allowable leakage: _____ gallons

D = Diameter of pipe: _____ inches

N = Number of joints in test section: _____

(II) CONDUCT AIR VOLUME TEST:

1. Pressurize line to 150 psi
2. Remove volume of water equal to amount of allowable leakage
3. Recheck pressure to assure a significant change (10 psi min.) from 150 psi.

(III) CONDUCT PRESSURE TEST:

1. Re-pressurize line to 150 psi
2. Add water as necessary to maintain pressure between 140 and 150 psi for test period (2 hours)
3. Upon completion of test period add water to increase the pressure back to 150 psi
4. Measure total volume of water added in steps 2 & 3. ***If the volume of water added exceeds allowable leakage, the test failed.***

SECTION 05 – WATER SERVICE LINES

TP-05.01 SCOPE:

Furnish all labor, materials, equipment, and incidentals as required, and perform all operations in connection with the complete installation of water service lines, in strict accordance with the applicable drawings and these Technical Provisions. All permits, permissions, or other authorizations required by the tribal or municipal utility authority for tapping and connection are the responsibility and to the cost of the Contractor.

TP-05.02 GENERAL:

New service lines will be identified on the drawings. Water service lines shall be installed as shown on the detail drawing and connected to the existing building water service line stub-out within five (5) feet of the building. Contractor shall verify the location, size, and type of service line stub-out. Service line staking and staking for new water main tap and meter box shall be performed by the Contractor and approved by the Owner or Owner's Representative. Locating existing lines and valves shall be the responsibility of the Contractor in coordination with a representative from the operating utility. Existing water service lines will be properly abandoned in place and all facilities located at ground surface shall be removed and disposed of at the Contractor's expense. Trench excavation and backfilling operations shall be performed as specified in Technical Provision 01 (TP-01).

Contractor shall contact each resident or business to verify the time that water service will be disconnected during service line tie-in. Connection to existing service or utilities, or other work that requires the temporary shutdown of any existing services shall be planned and coordinated with the operating utility.

TP-05.03 WATER SERVICE LINE MATERIALS:

- A. Polyethylene (PE) Pipe: All polyethylene (PE) pipe and fittings furnished under this specification shall be NSF and AWWA approved for potable water service line, shall conform to ASTM D3035 (Controlled Outside Diameter), shall conform to all applicable provisions and requirements of the latest revision of AWWA C901-08 and, by inclusion, all appropriate standards referenced therein. PE pipe must be 200 psi minimum pressure rated, Iron Pipe Size (IPS) DR-11 PE4710 or equal and shall have a Plastic Pipe Institute (PPI) recommended long term Hydrostatic Design Stress (HDS) of at least 1,000 psi at a temperature of 73°F (23°C).
- B. PE Pipe Fittings: Brass fittings for the PE pipe shall be designed to prevent collapsing and pullout. Fittings shall use a compression ring, or pack joint, with stainless steel stiffeners, to make a watertight connection. Fittings shall not contain lead and shall be Mueller Insta-tite, Ford (Ultra-tite, Pack Joint, or Grip Joint), or equal as approved by the Owner or Owner's Representative.
- C. Service Saddles: Water service saddles or clamps, shall be of stainless steel, bronze, or brass construction and of a design that will prevent collapsing of the PVC main line. Service saddles or clamps shall comply with the latest versions of AWWA C605 and C800. Saddles shall be Mueller BR 2 S (for all types of water mains) or BR 2 B (not allowed for PVC mains) Series double strap type, Mueller SS Series stainless steel service saddles (for all types of water mains), Ford FS202 Series double strap type (for all types of water mains), Ford FS303 Series stainless steel service saddles (for all types of water mains), or approved equal, for the size of pipe tapped. Threads shall be IPT.
- E. Corporation Stops: Corporation stops shall be brass with IPT inlet and an Insta-tite, Grip Joint, Ultra-tite, or Pack Joint outlet. Corporation stops shall be lead free and be equal to Mueller H-15028 or Ford FB1000-4 per the latest version of AWWA C800.
- F. Curb Stops and Boxes: Curb stops shall be brass, Mueller Mark II Oriseal or Ford ball valve curb stop or approved equal. Curb stops shall have IPS to PE Insta-tite (Mueller), Ultra-tite (Ford), Pack Joint

(Ford), or Grip Joint (Ford) end connections, a solid tee head roadway, and quarter turn stops. Curb stop valves must comply with AWWA C800 (latest version). Boxes shall be 1-1/4-inch diameter Arch Pattern in cast iron, Mueller, Ford, or approved equal. They shall have a 48-inch minimum box extension length with a 40-inch stationary rod and a one piece locking top.

G. Water Meter and Box Combination:

1. Coppersetter: Ford 70 Series lead-free coppersetter with cartridge style dual check valve and angle ball valve stop; 5/8-inch by 3/4-inch or approved equal shall be utilized. Adequate brace bars to support the meter in a horizontal position in a rigid manner shall be provided. Where an Individual PRV is required, a Ford 72 Series Tandem lead-free coppersetter with cartridge style dual check valve and angle ball valve stop; 5/8-inch by 3/4-inch or approved equal shall be installed.
2. Individual Pressure Reducing Valve (PRV): If required, or as shown on the drawings, PRVs shall be lead-free and NSF-certified. Individual PRVs shall be Zurn-Wilkins Model NR3XL or approved equal. The PRV shall only be installed if indicated on the plans.
3. Water Meter: The water meter shall be a sealed register magnetic drive water meter with nutating disc, positive displacement, magnetic, or ultrasonic lead-free meter. The meter shall be Badgermeter Model 25, Sensus iPerl, Neptune T10 series, Kamstrup Ultrasonic water meter, or equal as indicated on the project drawings and as approved by Owner and noted on the bid schedule.
4. Meter Box: Boxes in traffic areas shall be wire reinforced concrete with steel diamond plate or cast iron covers with interlocked sections. Boxes and covers in non-traffic areas shall be wire reinforced concrete. All sections of all boxes shall be nested or otherwise interlocked to prevent lateral movement. Sufficient sections shall be installed to provide a walled enclosure for a minimum depth of 6 inches below the angle valve. Minimum cover opening dimensions shall be 9-inches by 14-inches. Pea gravel or 3/4 inch crushed rock shall be placed inside the meter can below the water meter to a minimum depth of three (3) inches as shown on the drawings. The meter box shall be installed on bricks or masonry block on top of the prepared subsurface.

H. Tracer Wire, Tracer Wire Access Point, and Warning Tape: Shall be installed with water service line.

TP-05.04 SERVICE SADDLE AND CORPORATION STOP INSTALLATION:

A water service saddle shall be installed at the water main with a corporation stop. Each connection to a water main shall be live tapped through the corporation stop with an approved tapping machine, unless otherwise approved by the Owner or Owner's Representative in writing. Dry taps are only permitted during new water main installation, prior to disinfection.

TP-05.05 SERVICE LINE INSTALLATION:

Water service lines shall be installed per ASTM D2774 (PE) or AWWA C605-05 (PVC). PE pipe shall be installed with sufficient slack for thermal expansion and contraction. All water service lines shall have a minimum cover of 36 inches, or as directed by the Owner or Owner's Representative. The water meter and box shall be installed as shown on the standard detail.

When work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth, or foreign substances will enter the pipes or fittings. Install Tracer Wire and Warning Tape along the water service lines from the water main to the meter box and to the building, or as shown on the drawings.

TP-05.06 METER BOX INSTALLATION:

The meter box shall be installed on top of a gravel base and bricks or masonry blocks as indicated in the Detail. The meter box shall be set 1/2 inch above the finished grade of the site or adjacent pavement surface. The meter box shall be supported during backfill to ensure final setting of the meter box is plumb.

TP-05.07 AS-BUILT DRAWING:

The requirements of Technical Provision 01 must be met. Failure to properly identify these items will result in the Contractor having to uncover pipe at Contractor's expense to verify their location. The as-builts shall become the property of the Owner after contract completion.

TP-05.08 TESTING AND FLUSHING:

Water service lines and joints shall be tested by applying mainline pressure to the service line before backfilling. No visible leakage will be allowed. After installation, the water service line, meter, and valves shall be thoroughly flushed for a minimum of 15 minutes. Flushing shall be completed prior to connecting to the house or existing service line. If a restricted flow, or leak, is observed, the Contractor shall correct the identified problem prior to backfilling.

SECTION 06 - GALVANIC ANODES FOR METALLIC FITTINGS

PART 1 GENERAL

1.01 SUMMARY

- A. The work covered by this section includes furnishing and installing galvanic anodes on all buried metallic pipe fittings including but not limited to, valves, bends, tees, crosses, couplings, solid sleeves, and fire hydrants.

1.02 SUBMITTALS

- A. CONTRACTOR shall provide a single submittal detailing all cathodic protection materials and equipment used on this project.

PART 2 MATERIALS

2.01 THERMITE WELD SYSTEM

- A. Erico CADWELD system or approved equal shall include all necessary molds, tools, weld metal charges, etc. for installation in accordance with manufacturer's recommendations.

2.02 GALVANIC ANODES

- A. Packaged zinc anodes in accordance with ASTM B-418, Type II including cloth bag with gypsum/bentonite/sodium sulfate bedding and a minimum of 10' of #12 AWG stranded, insulated copper wire. 6" valves and fittings: 1 – 5 lb. zinc anode; fire hydrants: 1 – 18 lb. zinc anode.

2.04 COPPER WELD SLEEVE

- A. Copper weld sleeves sized for wire type shall be used on each welded connection.

2.03 WELD CAPS

- A. Royston Handy Cap IP or approved equal shall be used to cover completed weld and coatings

2.04 COPPER SPLIT BOLT CONNECTOR

- A. Split bolt connectors shall be used for splicing or repairing anode wires as necessary. Wrap completed splices with Polyken Tape, heat shrink sleeve, or approved equal.

2.05 COATING REPAIR MATERIALS

- A. Furnish and install Denso Protal 7125 system (or approved equal) for coating repair on small fittings or in locations where weld caps cannot adequately cover weld and exposed metal surfaces. Clean surfaces thoroughly and apply coating repair materials in accordance with manufacturer's recommendations.

PART 3 EXECUTION

3.01 RESPONSIBILITY FOR MATERIAL

- A. CONTRACTOR shall be responsible for all material furnished by him and shall replace at his own expense all such material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all materials and labor required for the placement of installed material discovered damaged or defective prior to the final acceptance of the work, or during the warranty period.
- B. CONTRACTOR shall be responsible for the safe and proper storage of material furnished by him or to him and accepted by him, and intended for the work, until it has been incorporated in the completed project. The interior of all pipe and other accessories shall be kept free from dirt and foreign matter at all times.

3.02 ANODE INSTALLATION

- A. Using a small grinder or file, remove a small area of paint or coating on the fitting and expose bare metal. Fitting to galvanic anode lead wire connection shall utilize copper sleeve and be made with thermite weld system in accordance with manufacturer's recommended procedures. Allow ENGINEER to inspect each completed weld prior to installation and backfill. Once weld is completed, cover welded anode wire connection with pre-fabricated weld cap. Repair coating at weld location as approved by ENGINEER. Galvanic anode shall be buried a minimum of 3 feet away from any metallic protected fitting, outside the imported bedding material. Where multiple protected metallic fittings are installed in the same area or excavation, separate anodes by at least 5 feet horizontally and as approved in the field by the ENGINEER.

Note: No plastic wrap (poly-wrap) shall be used where galvanic anodes are installed on metallic fittings.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

All payments will be based on completed work performed in strict accordance with the drawings and specifications, and the respective prices and payment shall constitute full compensation for all work completed, including incidentals. If an item is not listed for separate payment, it shall be considered subsidiary to other bid items.

1. MOBILIZATION: Payment for mobilization/demobilization shall be at the unit price listed in the bid schedule with payment made on a percentage of lump sum bid item as approved by the Owner and Engineer. Payment for this item includes the costs associate with preparatory work and operations including but not limited to those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; establishment of all offices, buildings, and other facilities necessary for the work on the project and for all other work and operations which must be performed or costs incurred prior to beginning work on the site. Also included are all costs for contract bonds and insurance as well as demobilization costs to move equipment and facilities off site, surface restoration and final cleanup.
2. CONTSTRUCTION STORMWATER MANAGEMENT AND SWPPP: Payment for the preparation and implementation of the SWPPP shall be paid on a lump sum basis as shown on the Bid Schedule. Payment shall be full compensation for plan preparation including required revisions for Owner's acceptance, updates to the SWPPP for the life of the project, permit application, inspections, installation and maintenance of controls, modification of controls as determined by inspections, removal of pollutants due to failed controls, and permit termination.
3. CONTSTRUCTION SIGNING AND TRAFFIC CONTROL: Payment for construction signing and traffic control shall be paid on a percentage of the lump sum bid item as approved by the Owner and Engineer. Payment shall be full compensation for preparation and submittal of a traffic control plan including required revisions for Owner's acceptance, updates to the plan, placement and maintenance of traffic control signage devices, barricades, barrier and flagging necessary to safely and efficiently control traffic around the work areas. Also included is all materials, equipment, labor, consumables, fuel, coordination and any other incidentals associated with traffic control.
4. MATERIALS TESTING AND SURVEY: Payment for materials testing and surveying shall be made on a percentage of lump sum bid item as approved by the Owner and Engineer. Payment shall be full compensation for materials testing associated with sampling, index testing, development of moisture density curves, field testing and reporting, reporting of test results to the Owner and Engineer, and re-testing as required. Payment for surveying shall be full compensation for hiring of a qualified surveyor, setting and establishing control, construction staking, and re-staking as required. Also included are all materials, equipment, labor, consumables, fuel, coordination and any other incidentals associated with material testing and surveying.
5. EXPLORATORY TIME: Exploratory time shall be measured on an hourly basis for an actual period spent on locating the existing utility line exceeding two (2) hours. Contractor shall follow these steps:
 1. Call the representative from the operating Utility and make every effort to locate the existing utility line prior to excavation.
 2. Locate the existing utility line for two hours at the Contractor's expense.
 3. If the Contractor is unable to locate the existing utility line within two hours, the Contractor shall notify the Owner or Owner's Representative and both agree upon a start time. The start time shall be recorded. When the Contractor locates the existing utility line, the end time shall be recorded.

If the Contractor fails to notify the Owner or Owner's Representative when the Contractor will start locating the existing utility line, the Contractor will not be compensated. Payment for exploratory time

shall be at the contract unit price shown in the Bid Schedule. This price shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for locating the existing utility line.

6. CONNECTION TO EXISTING WATER MAINS: Payment for connection to existing water main shall be at the contract price shown in the Bid Schedule. Payment shall be full compensation for excavation, rock excavation, dewatering, fittings, MJ coupling, tapping sleeves, adapters, thrust blocks, mechanical restrained joints, markers, compaction, backfilling and any other supplies and materials.
7. INSTALL WATER MAIN: Water pipe shall be measured in linear feet along the centerline of the pipe, including fittings, for each of the various sizes of water pipe installed. Payment for water pipe shall be at the contract unit price shown in the Bid Schedule. This price shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, imported pipe bedding, stabilization material, compaction, backfilling, pipe installation, sewer main crossings, fittings, thrust blocks, mechanical joint restraints, water main warning tape, water main tracer wire, tracer wire access box, hydrostatic pressure testing, disinfection, flushing, bacteriological testing, as-built drawings, final grading and final cleanup.
8. INSTALL GATE VALVE AND BOX: Payment for water main gate valves shall be measured each for the various sizes of gate valves installed. Payment for valves shall be at the contract unit price shown in the Bid Schedule, which shall be full compensation for furnishing all labor, equipment, related valves boxes, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, gate valves, valve box, debris cap, concrete block, mechanical joint restraints, reinforced concrete pad, anode, tracer wire access box, rip rap, marker posts, compaction, backfilling, as-built drawings, and final cleanup.
9. INSTALL WATER MAIN FITTINGS: Payment for water main fittings shall be measured each for the various sizes and type so fittings installed. Payment for fittings shall be at the contract unit price shown in the Bid Schedule, which shall be full compensation for furnishing all labor, equipment, related valves boxes, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, fitting, mechanical joint restraints, reinforced concrete pad, anode, compaction, backfilling, as-built drawings, and final cleanup.
10. INSTALL FLUSHING HYDRANT ASSEMBLY: Payment for hydrants shall be at the contract unit price shown in the Bid Schedule for each type of hydrant shown on the Bid Schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, MJ tee, connection to the main, mechanical joint restraints, auxiliary piping, gate valve and box, reinforced concrete pad, anode, tracer wire access box, rip rap, hydrant, thrust block, seepage gravel, concrete blocks, filter fabric, compaction, backfilling, as-built drawings, and final cleanup.
11. INSTALL WATER SERVICE TAP: Cost for the water service tap shall include the water main tap, water service saddle, and corporation stop. Each water service line connection shall be measured such that a water main tap and connection to the corresponding building stub-out or plugged line as required shall be counted as a total of one each. Payment for these connections shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, water main tap, saddle, corporation stop, building stub-out connection or line termination and plugging, applicable tapping fees, backfilling, compaction, and final cleanup.
12. INSTALL WATER SERVICE BORE UNDER ROAD: Water service line bore shall be measured in linear feet along the centerline of the pipe. Payment for the water service lines shall be at the contract

unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, bore and receiving pits, dewatering, boring machine mobilization and setup, pilot hole, line and grade control, pulling pipe and tracer wire, pipe installation, tracer wire, backfilling, compaction, disinfection, hydrostatic testing, and final cleanup.

13. INSTALL WATER SERVICE LINE (ITEMS 13 and 14): Water service lines shall be measured in linear feet along the centerline of the pipe. Payment for the water service lines shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, bedding, stabilization material, pipe installation, tracer wire, backfilling, compaction, seeding, disinfection, hydrostatic testing, and final cleanup.
15. INSTALL CURB STOP AND BOX: Curb stops shall be measured as each. Payment for the curb stops shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, curb stop, curb box and stationary rod, transition fittings, fittings, backfilling, compaction, and final cleanup.
16. INSTALL WATER METER ASSEMBLY: Water meter assembly including pressure reducing valve (PRV) and box shall be measured as each. Payment for the water meter, PRV, and box shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, rock excavation, dewatering, meter pit and lid, copper-setter, water meter, PRV, fittings, backfilling, compaction, and final cleanup.
17. INSTALL BOLLARDS: Bollards shall be measured as each. Payment for the bollards shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, pipe, concrete, paint backfilling, compaction, and final cleanup.
18. INSTALL CARSONITE UTILITY LINE MARKERS: Utility line markers shall be measured as each. Payment for the markers shall be at the contract unit price shown on the bid schedule, which shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for a complete installation, including excavation, marker post, backfilling, compaction, and final cleanup.
19. SEEDING AND RECLAMATION: Seeding shall be paid for on a lump sum basis to re-seed the site in accordance with these specifications. Payment for seeding shall be at the contract unit price shown in the Bid Schedule. This price shall be full compensation for furnishing all labor, equipment, materials, and incidentals required for complete installation.

BID SCHEDULE

WEST WATER PHASE 1A

Item No	Item Name	Units	Quantity	Unit Price	Extended Price
1	MOBILIZATION	LS	1		
2	CONSTRUCTION STORMWATER MANAGEMENT	LS	1		
3	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	LS	1		
4	MATERIALS TESTING AND SURVEY	LS	1		
5	EXPLORATORY TIME	HR	4		
6	CONNECT TO EXISTING WATER MAIN	EA	1		
7	INSTALL 6" C900 DR 18 PVC WATER MAIN	LF	700		
8	INSTALL 6" MJ GATE VALVE AND BOX	EA	2		
9	INSTALL 6" MJ CAP	EA	1		
10	INSTALL FLUSHING HYDRANT ASSEMBLY (HYDRANT, TEE, VALVE, VALVE BOX)	EA	1		
11	INSTALL 1.5" WATER SERVICE TAP	LS	1		
12	INSTALL 1.5" WATER SERVICE LINE BORE UNDER ROAD	LF	50		
13	INSTALL 1.5" WATER SERVICE LINE	LF	63		
14	INSTALL 3/4" WATER SERVICE LINE	LF	66		
15	INSTALL 3/4" CURB STOP AND BOX	LS	1		
16	INSTALL METER PIT ASSEMBLY	LS	1		
17	INSTALL BOLLARDS	EA	4		
18	INSTALL CARSONITE UTILITY LINE MARKERS	EA	4		
19	SEEDING AND RECLAMATION	LS	1		
TOTAL BID					

TOTAL BID WRITTEN IN WORDS:

SUBMITTAL REVIEW FORM

Project Name: _____

Contractor: _____

Contractor Signature _____

Submittal No. _____

Date: _____

Received by ENGINEER: _____

Received by OWNER: _____

Specification	Description (Type, Model, Manufacturer, etc.)	Action by Owner
Safety Plan, including competent person		
Traffic Control Plan and Right of Way Permit		
Warning Tape		
Tracer Wire, Tracer Wire Access Points, and Tracer Wire Splice Kit		
Utility Line Marker		
Bollard		
Embedment and Bedding Material		
Stabilization Material		
Cement Slurry		
Soil Testing Lab		
Baseline testing location plan		
Modified Proctor Testing		

SUBMITTAL REVIEW FORM

Project Name: _____

Contractor: _____

Contractor Signature _____

Submittal No. _____

Date: _____

Received by ENGINEER: _____

Received by OWNER: _____

Specification	Description (Type, Model, Manufacturer, etc.)	Action by Owner
Density Test Results		
Gravel		
Pavement Patch Mix		
SWPPP		
Stake Out Plan, Survey Sub-Contractor		
Seed, Seeding Method, and Seeding Protection		
PVC Pipe		
DI Pipe		
DI Fittings		
(Bends, Tees)		
Pipe Restraint		
Gate Valve		

SUBMITTAL REVIEW FORM

Project Name: _____

Contractor: _____

Contractor Signature _____

Submittal No. _____

Date: _____

Received by ENGINEER: _____

Received by OWNER: _____

Specification	Description (Type, Model, Manufacturer, etc.)	Action by Owner
Gate Valve Box & Lid		
Filter Fabric		
Hydrant		
Poly-wrap		
Pressure Testing		
Method & Equip		
Pressure Test Results		
Disinfection Method		
Water Testing Lab & Bacteriological Results		
Method of Connection to Existing Water Main		
PE Pipe		
PE Pipe Fittings		

SUBMITTAL REVIEW FORM

Project Name: _____

Contractor: _____

Contractor Signature _____

Submittal No. _____

Date: _____

Received by ENGINEER: _____

Received by OWNER: _____

Specification	Description (Type, Model, Manufacturer, etc.)	Action by Owner
Service Saddles		
Corporation Stops		
Curb Stop & Box		
Coppersetter		
Pressure Reducing Valve		
Water Meter		
Meter Box with Cover		

Construction Drawings – DOWL

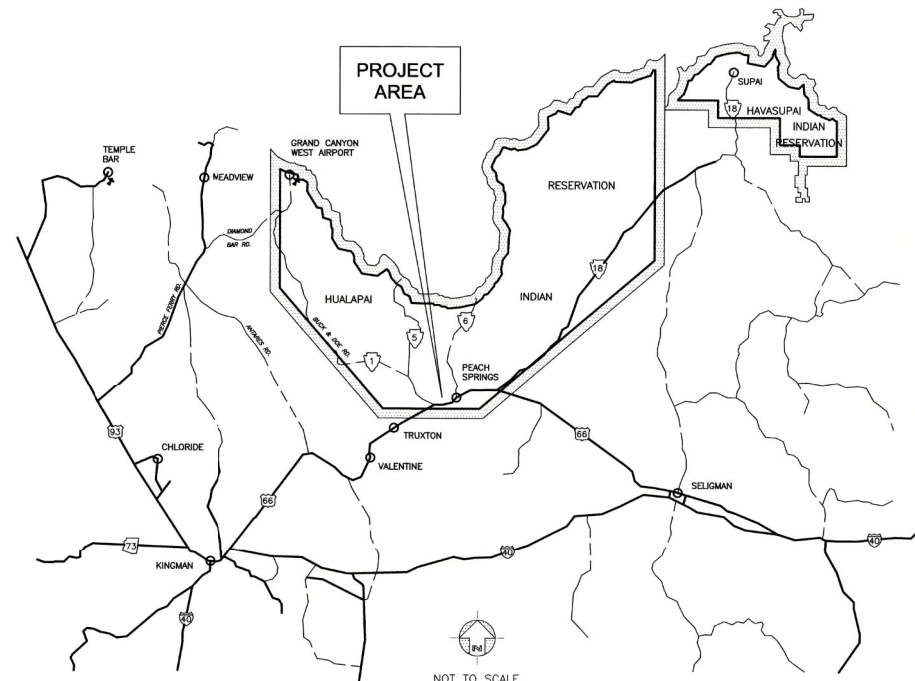
CONSTRUCTION DRAWINGS

for

WEST WATER PHASE 1A WATER MAIN EXTENSION AND WATER SERVICE LINE HUALAPAI INDIAN RESERVATION MOHAVE COUNTY, ARIZONA

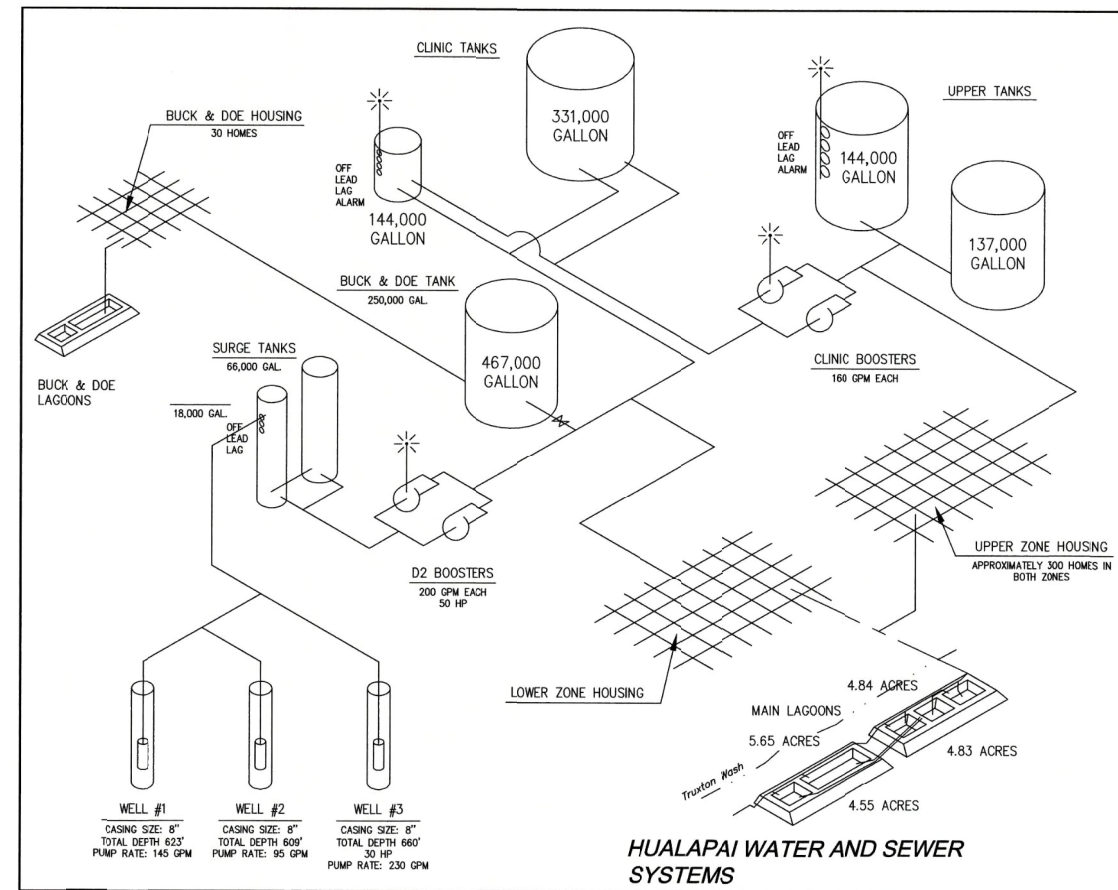


LOCATION MAP



LOCATION MAP

SHEET INDEX	
SHEET	TITLE
G-001	COVER SHEET-MAPS & APPROVALS
G-002	NOTES AND LEGENDS
C-101	PLAN AND PROFILE
C-102	INDIVIDUAL SITE LAYOUT
C-103 TO C-104	DETAILS



SYSTEM SCHEMATIC

ISSUED FOR CONSTRUCTION

APPROVED BY: _____ DATE: _____
PUBLIC WORKS DIRECTOR

REV	DATE	DESCRIPTION



DOWL
WWW.DOWL.COM
4686 East Van Buren St., Suite 175
Phoenix, Arizona 85008
480-753-0800

WEST WATER PHASE 1A
WATER MAIN EXTENSION AND
WATER SERVICE LINE
COVER SHEET
MAPS AND APPROVALS

PROJECT 28.27098.01
DATE 03/30/2023

© DOWL 2023
SHEET

G-001

C:\dowl_pw\40399508\SC-CU-1519_BUCK_AND_DOE-RD.dwg PLOT DATE 2023-03-30 08:30 SAVED DATE 2023-03-30 08:12 USER: jbridgewater

GENERAL NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE MARICOPA ASSOCIATION OF GOVERNMENTS' (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (MAG STANDARDS) UNLESS OTHERWISE NOTED HEREIN OR IN PROJECT TECHNICAL PROVISIONS. DISCREPANCIES SHALL BE RESOLVED IN FAVOR OF MORE STRINGENT REQUIREMENTS.
- THE OWNER AND ENGINEER, SHALL BE NOTIFIED 24-HOURS PRIOR TO ANY CONSTRUCTION WORK. ANY WORK CONCEALED WITHOUT INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S/DEVELOPER'S EXPENSE.
- AN APPROVED SET OF PLANS MUST BE AVAILABLE ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR'S REPRESENTATIVE (CAPABLE OF COMMUNICATING WITH TRIBAL REPRESENTATIVES) SHALL BE ON THE JOB AT ALL TIMES THE WORK IS BEING PURSUED.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE EMERGENCY TELEPHONE NUMBERS TO THE HUALAPAI TRIBE AND HAVE PERSONNEL AVAILABLE 24-HOURS A DAY TO RESPOND TO EMERGENCIES. IF TRIBAL AGENCIES ARE REQUIRED TO RESPOND AND MAKE EMERGENCY REPAIRS ON BEHALF OF THE CONTRACTOR/DEVELOPER, THE CONTRACTOR/DEVELOPER IS RESPONSIBLE TO REIMBURSE THE TRIBE FOR ALL COSTS INCURRED.
- IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO ARRANGE FOR THE RELOCATION AND RELOCATION COSTS OF ALL UTILITIES AND SUBMIT A UTILITY RELOCATION SCHEDULE.
- THE PROCEDURES AND METHODS USED TO SAMPLE, TEST MATERIALS, AND REPORT TEST RESULTS WILL BE APPROVED BY TRIBAL AGENCIES. FOR ALL PHASES OF CONSTRUCTION, THE TYPE, SCHEDULING, FREQUENCY AND LOCATION OF ALL MATERIALS TESTING AND SAMPLING SHALL BY TRIBAL AGENCIES. ALL TEST RESULTS SHALL BE REPORTED DIRECTLY (IN WRITING) TO THE TRIBAL AGENCIES. FOR EACH PHASE OF CONSTRUCTION, TEST RESULTS (IN WRITING) MUST BE RECEIVED FROM THE TESTING LABORATORY, PRIOR TO START OF THE NEXT PHASE OF CONSTRUCTION.
- THE CONTRACTOR MUST GIVE A LOCATION FOR WASTING EXCESS EXCAVATION MATERIALS AND A LETTER FROM THE OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ON-SITE CONSTRUCTION.
- THE LOCATION OF UTILITIES SHOWN IS BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. LOCATIONS SHOWN ARE APPROXIMATE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY THE PRESENCE AND LOCATION OF ALL EXISTING OVERHEAD AND/OR UNDERGROUND UTILITIES THAT MAY INTERFERE WITH THIS CONSTRUCTION, WHETHER OR NOT SAID UTILITIES ARE SHOWN ON THE CONSTRUCTION PLANS FOR THIS PROJECT AND TO ADEQUATELY PROTECT AND MAINTAIN ANY SUCH UTILITIES.
- THE CONTRACTOR SHALL CONTACT BLUE STAKE (602) 263-1100 PRIOR TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CURRENT BLUE STAKE MARKINGS THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR MAY OBTAIN CONSTRUCTION WATER FROM THE LOAD OUT FACILITY LOCATED IN PEACH SPRINGS. COORDINATE WITH TRIBAL PUBLIC SERVICES ON OPERATIONS AND PAYMENT.
- CONTRACTOR IS RESPONSIBLE TO CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES IN ORDER TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS OR STREETS.
- ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT IMPROVEMENTS, WHETHER EXISTING OR PROPOSED, FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.
- ANY AND ALL OBSTRUCTIONS WITHIN THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE REMOVED BEFORE ANY CONSTRUCTION IS COMMENCED.
- CONTRACTOR IS RESPONSIBLE TO OBTAIN A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS, INCLUDING NOTICE OF INTENT (NOI), NOTICE OF TERMINATION, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP). A COPY OF THE NOI AND SWPPP SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES. ALL SWPPP PLANS MUST INCLUDE THE NOI TRACKING NUMBER ADMINISTERED BY ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) ON THE BOTTOM RIGHT HAND CORNER OF THE SHEET.
- CONTRACTOR IS RESPONSIBLE TO OBTAIN THE NECESSARY 401 AND 404 PERMITS.
- CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS AS REQUIRED BY OTHER AGENCIES WHICH HAVE JURISDICTION AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF THESE PERMITS AS SET FORTH THEREIN.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL JOB SITE SAFETY, INCLUDING BUT NOT LIMITED TO MEETING ALL REQUIREMENTS OF OSHA AND ADOHS.
- CONSTRUCTION WORK HOURS SHALL BE AS 6:00 AM TO 7:00 PM UNLESS OTHERWISE APPROVED BY TRIBAL REPRESENTATIVES.

UTILITY CONSTRUCTION NOTES

- PROJECT APPROVAL BY THE HUALAPAI TRIBE FOR COMPLIANCE WITH TRIBAL REQUIREMENTS SHALL NOT PREVENT THE TRIBAL REPRESENTATIVES FROM REQUIRING CORRECTION OF ERRORS FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, OR REQUIREMENTS FOR UTILITY CONSTRUCTION IN THE ROW.
- PROPER NOTIFICATION MUST BE MADE TO ALL AFFECTED RESIDENTS. THIS INCLUDES NOTIFICATION/INFORMATION SIGNS AND HANGING OF DOOR NOTICES. DOOR NOTICES SHALL BE DISTRIBUTED PRIOR TO BLUE-STAKING AND COMMENCING NON-EMERGENCY WORK.
- ALL WORK REQUIRING ASPHALT REPLACEMENT, CONCRETE REPLACEMENT OR RESURFACING IN THE ROW WILL REQUIRE A FINAL INSPECTION WITH THE UTILITY COMPANY REPRESENTATIVE AT THE TIME OF COMPLETION. TEMPORARY PAVEMENT REPLACEMENT THAT USES COLD-MIX ASPHALT SHALL BE REPLACED NO LATER THAN 7-BUSINESS DAYS AFTER INITIAL PLACEMENT. THIS ALSO INCLUDES PAVEMENT MARKINGS.
- ALL POTHoles FOR EXISTING UTILITY CROSSINGS OR SOIL BORINGS FOR FUTURE UTILITIES WILL BE REPAIRED WITH A FULL DEPTH T-TOP PER MAG STANDARD DETAIL 212.
- ALL TRENCHES IN EXISTING AND FUTURE PAVEMENT OR WITHIN 2 FEET OF BACK OF CURB ARE REQUIRED TO BE BACKFILLED AND WILL REQUIRE ABC COMPACTED TO 95% OR 1/2 SACK SLURRY CONTROLLED LOW-STRENGTH MATERIAL PER MAG SECTIONS 604 AND 728.
- ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY SHALL BE REPORTED TO THE TRIBAL PUBLIC WORKS AND THE PROPERTY OWNER. REPAIR AND/OR REPLACEMENT, IN KIND, SHALL BE COORDINATED WITH THE PROPERTY OWNER AND/OR TRIBAL AUTHORITIES.
- THE JOBSITE SHALL BE CLEANED OF ANY DEBRIS OR SPOILS RESULTING FROM THIS PROJECT AT THE COMPLETION OF THE PROJECT.

ENGINEER'S GENERAL NOTES

- NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, OR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
- THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK. THIS IS THE CONTRACTOR'S SOLE RESPONSIBILITY. THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING PUBLIC STREETS. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO ENSURE THAT ALL ROADWAYS AND ON-SITE PARKING LOTS/FIRE LANES ARE MAINTAINED IN A CLEAN, MUD AND DUST-FREE CONDITION AT ALL TIMES.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE UNDERGROUND UTILITY LOCATIONS AND/OR ELEVATIONS AS SHOWN ON THESE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE FROM UTILITY RECORDS AND OTHER DATA AS SUPPLIED TO THE ENGINEER. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THERE MAY BE OTHER UNDERGROUND UTILITY LINES, SERVICE LINES, AND STRUCTURES PRESENT IN THE SUBJECT AREA. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IF EXISTING UTILITIES ARE FOUND TO CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE ENGINEER AND APPROPRIATE TRIBAL REPRESENTATIVES MUST APPROVE, PRIOR TO CONSTRUCTION, ANY ALTERATION OR VARIANCE FROM THESE PLANS. ANY PROPOSED VARIATIONS SHALL BE SHOWN ON CONSTRUCTION FIELD PRINTS AND TRANSMITTED TO THE ENGINEER FOR REVIEW.
- ANY INSPECTION BY THE OWNER OR ENGINEER SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND COMMUNITY REQUIREMENTS.
- SHOULD THE CONTRACTOR ENCOUNTER AN EXISTING STRUCTURE (ABOVE OR BELOW GROUND) IN THE WORK FOR WHICH DISPOSITION IS NOT INDICATED ON THE PLANS, THE ENGINEER AND TRIBAL REPRESENTATIVE SHALL BE NOTIFIED PRIOR TO DISTURBING SUCH STRUCTURE. THE DISPOSITION OF EXISTING STRUCTURES SO ENCOUNTERED SHALL BE DETERMINED BY THE ENGINEER AND TRIBAL REPRESENTATIVE.

- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL CONSTRUCTION DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN ACCORDANCE WITH TRIBAL, STATE, AND FEDERAL RULES, REGULATIONS, AND LAWS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND PROPER DISPOSAL.
- THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION ON THE PLANS OR SPECIFICATIONS. IN THE EVENT THE CONTRACTOR DISCOVERS ANY APPARENT ERROR OR DISCREPANCY, HE SHALL IMMEDIATELY CALL UPON THE ENGINEER FOR HIS INTERPRETATION AND DECISION, AND SUCH DECISION SHALL BE FINAL.
- EXISTING SITE IMPROVEMENTS WHICH ARE DAMAGED OR DISPLACED BY THE CONTRACTOR'S OPERATIONS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER, WHO SHALL APPROVE REPAIRS PRIOR TO CONSTRUCTION. THE OWNER MAY WITHHOLD FINAL PAYMENT UNTIL REPAIRS ARE INSPECTED AND APPROVED.
- THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS AND BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION, ELEVATION, AND/OR SIZE OF EXISTING PIPE INVERTS, FLOOR ELEVATIONS, AND CURB OR PAVEMENT AT LOCATIONS WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL CONTROL BY REFERENCING SHOWN DIMENSIONS OR COORDINATES TO KNOWN PROPERTY LINES AND NOTIFY THE ENGINEER OF DISCREPANCIES IN EITHER VERTICAL OR HORIZONTAL CONTROL PRIOR TO PROCEEDING WITH WORK.
- PROPERTY CORNERS AND BENCHMARKS SHALL BE CAREFULLY PROTECTED. PROPERTY MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER.
- AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE REDLINED MARK-UPS OF AS-BUILT CONDITIONS TO THE ENGINEER IN HARD COPY OR ELECTRONIC FORMATS.

WATER SYSTEM CONSTRUCTION NOTES

- IN ADDITION TO PROJECT TECHNICAL PROVISIONS AND MAG STANDARDS, ALL WORK SHALL BE DONE ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODE, TITLE 18, CHAPTER 9 TOGETHER WITH THESE PLANS.
- THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANIES IN PROTECTING AND WORKING AROUND THEIR UTILITIES AND SERVICE LINES.
- UTILITY FACILITIES, SHOWN OR NOT SHOWN IN CONFLICT WITH THIS WORK SHALL BE RELOCATED BY THE GENERAL CONTRACTOR AS REQUIRED. THIS ACTIVITY SHALL BE COORDINATED WITH THE OWNER OF THE UTILITY TO PREVENT ANY UNNECESSARY INTERRUPTION OF SERVICE.
- WATER LINE AND GRADE STAKES SHALL BE SET BY A QUALIFIED ARIZONA REGISTERED LAND SURVEYOR AND/OR THEIR REPRESENTATIVE PRIOR TO THE CONSTRUCTION OF WATER LINES. THE QUALIFIED ARIZONA REGISTERED LAND SURVEYOR AND/OR THEIR REPRESENTATIVE SHALL VERIFY THAT THE GRADES CONFORM TO THE APPROVED CONSTRUCTION PLANS AND PROVIDE CUT SHEETS TO THE CONTRACTOR AND ENGINEERING INSPECTOR. AFTER INSTALLATION AND PRIOR TO ACCEPTANCE, THE ENGINEER OF RECORD SHALL CERTIFY THAT WATER LINE INSTALLATION CONFORMS TO THE APPROVED CONSTRUCTION PLANS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE MATERIALS SPECIFIED BY THE DESIGN ENGINEER ON THE CONTRACT DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND TRIBAL PUBLIC SERVICES.
- CONSTRUCTION MATERIAL USED IN THE WATER SYSTEM SHALL BE LEAD FREE AS DEFINED AT A.A.C. R18-4-504 AND R18-1-101
- ALL WATERLINES AND FITTINGS SHALL HAVE NSF PW SEAL.
- FIRE HYDRANT INSTALLATION SHALL MEET THE REQUIREMENTS OF IHS SPECIFICATIONS, HUALAPAI FIRE DEPARTMENT.
- WATER/SEWER SEPARATION SHALL MEET THE REQUIREMENTS OF R18-4-502C (LATEST REVISION). SEPARATION SHALL BE A MINIMUM OF 2' VERTICAL AND 6' HORIZONTAL. AND SHALL BE IN ACCORDANCE WITH MAG STANDARD DETAILS 404-1, -2, AND -3 AND MAG SECTION 601.
- WATER MAIN SHALL INCLUDE IMPORTED BEDDING MATERIAL IN ACCORDANCE WITH TECHNICAL PROVISIONS.
- ALL VALVES, FITTINGS AND FIRE HYDRANTS SHALL HAVE SHALL BE FACTORY EPOXY COATED AND LINED, SHALL INCLUDE STAINLESS STEEL FASTENERS (INCLUDING MJ T-BOLTS AND NUTS) AND SHALL INCLUDE ANODES AS REQUIRED IN TECHNICAL PROVISIONS.
- ALL THRUST BLOCKING FOR WATER LINES SHALL MEET THE REQUIREMENTS OF MAG STANDARD DETAIL NO. 380.
- ALL BLOCKING FOR WATER GATE VALVES SHALL MEET THE REQUIREMENTS OF MA.G. STANDARD DETAIL NO. 301.
- ALL JOINT RESTRAINTS SHALL BE INSPECTED PRIOR TO BACKFILL. FOR THRUST RESTRAINTS, REINFORCING STEEL AND FORM WORK SHALL BE INSPECTED PRIOR TO PLACING CONCRETE FOR THRUST BLOCKS. THRUST RESTRAINT SHALL CONFORM TO MAG SECTION 610.4 AND MAG STANDARD DETAILS 301,303, 380 AND 381.
- ALL TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATERLINES SHALL MEET THE REQUIREMENTS OF MAG SECTION 630, AND MAG STANDARD DETAIL NO. 340.
- ALL FITTINGS AND VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL VALVES ARE TO BE PLUMB AND HAVE STRAIGHT ALIGNMENT.
- THE CONTRACTOR SHALL NOT CONNECT TO ANY EXISTING WATER LINES WITHOUT PRIOR APPROVAL OF HUALAPAI PUBLIC SERVICES.
- CONTRACTORS SHALL NOT OPERATE VALVES ON THE EXISTING PEACH SPRINGS WATER SYSTEM.
- A WATER SYSTEM SHUT DOWN REQUEST MUST BE FORMALLY SUBMITTED IN WRITING 10-DAYS IN ADVANCE OF ANY REQUESTS TO SHUT DOWN ANY LINES IN THE PEACH SPRINGS POTABLE WATER DISTRIBUTION SYSTEM. THE REQUEST IS TO BE MADE TO HUALAPAI PUBLIC SERVICES. FAILURE TO COMPLETE FOLLOW THIS PROCESS MAY RESULT IN DELAYS TO CONSTRUCTION ACTIVITIES.
- WATER LINES SHALL BE INSTALLED IN SUCH A MANNER TO MINIMIZE DIPS OR HIGH POINTS. ALL WATER LINES SHALL BE PARALLEL TO THE STREET CENTERLINES OR PROPERTY LINES, OR AS CLOSE AS POSSIBLE, UNLESS THE DESIGN DOCUMENTS INDICATE OTHERWISE. ALL HORIZONTAL DEFLECTIONS IN WATER LINES SHALL COMPLY WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS FOR DEFLECTION AT JOINTS.
- WATER SERVICE LINES SHALL NOT BE LOCATED UNDER DRIVEWAYS, CONCRETE APRONS, SCUPPERS, CATCH BASINS, OR THE LIKE.
- ALL WATER VALVES LOCATED OUTSIDE PAVED AREAS SHALL HAVE A CONCRETE COLLAR, AND UTILITY MARKER.
- ALL EXISTING STREET PAVEMENT DISTURBED BY CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH CITY OF KINGMAN STANDARD DETAIL NO. 200-1.
- MINIMUM DEPTH OF COVER TO TOP OF WATER LINE SHALL NOT BE LESS THAN 48 INCHES. ANY PROPOSED CHANGES TO THIS REQUIREMENT MUST BE APPROVED IN WRITING BY THE ENGINEER AND TRIBAL PUBLIC SERVICES.
- FILLING, FLUSHING, PRESSURE TESTING, CHLORINATION, AND BACTERIOLOGICAL TESTING SHALL BE IN ACCORDANCE WITH TECHNICAL PROVISIONS.
- PRESSURE TESTING SHALL NOT BE CONDUCTED UNTIL AFTER THE CONTRACTOR HAS PRETESTED 100% OF THE LINES. INSPECTION TESTING MUST BE CALLED FOR 24-HOURS IN ADVANCE. WATER LINES MUST PASS PRESSURE TESTING AFTER DRY UTILITIES ARE INSTALLED AND PRIOR TO ANY CONCRETE WORK, STREET WORK, OR FINAL ACCEPTANCE OF THE WATER LINES.
- THE CONTRACTOR SHALL SURVEY FITTINGS, VALVES, HYDRANTS AND SERVICE TAPS AND PROVIDE THIS INFORMATION TO THE OWNER FOR AS BUILT DRAWINGS. ANY CHANGES TO THE APPROVED PLANS MUST BE AUTHORIZED BY THE ENGINEER OF RECORD AND HUALAPAI PUBLIC SERVICES BEFORE THE CHANGE IS MADE IN THE FIELD.
- A CERTIFICATE OF APPROVAL OF CONSTRUCTION (AOC) ISSUED BY THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, IS REQUIRED PRIOR TO FINAL PROJECT ACCEPTANCE. A COPY SHALL BE PROVIDED TO HUALAPAI PUBLIC SERVICES. IT SHOULD BE NOTED THAT THE ENGINEER OF RECORD OR DESIGNEE SHALL BE PRESENT DURING TESTING PROCEDURES SO THAT THE REQUIREMENTS OF THE AOC CAN BE COMPLETED IN FULL.
- PAYMENT FOR CONSTRUCTION SHALL BE MADE ON THE BASIS OF BID PRICES IN THE CONTRACTORS PROPOSAL. ALL ITEMS CALLED FOR ON THE PLANS BUT NOT LISTED IN BID ITEMS SHALL BE CONSIDERED INCIDENTAL. SAID ITEMS INCLUDE BUT ARE NOT LIMITED TO: WATER LINE BLOCKING, WARNING TAPE, TRACER WIRE, FILLING, FLUSHING, DISINFECTION, TESTING, SALVAGING MATERIAL, EXISTING UTILITIES CONNECTIONS, ETC.

CIVIL SITE LEGEND	
PROPOSED	EXISTING
WATER LINE	WATER LINE
WATER SERVICE	
	EDGE OF GRAVEL
	EDGE OF ROAD
	1400 MAJOR CONTOUR
	1401 MINOR CONTOUR
WATER METER	
CURB STOP	
WATER VALVE	WATER VALVE
FIRE HYDRANT	FIRE HYDRANT
WATER MAIN CAP	

UTILITIES

HUALAPAI TRIBE
PUBLIC SERVICES DEPARTMENT
P.O. BOX 179
941 HUALAPAI WAY
PEACH SPRINGS, ARIZONA 86434
PHILIP WISELY
TEL: 928-769-2216

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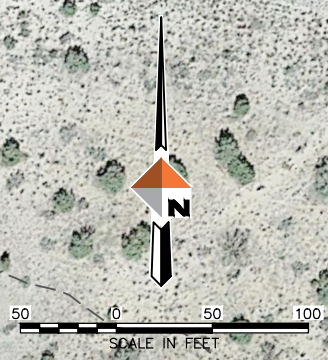
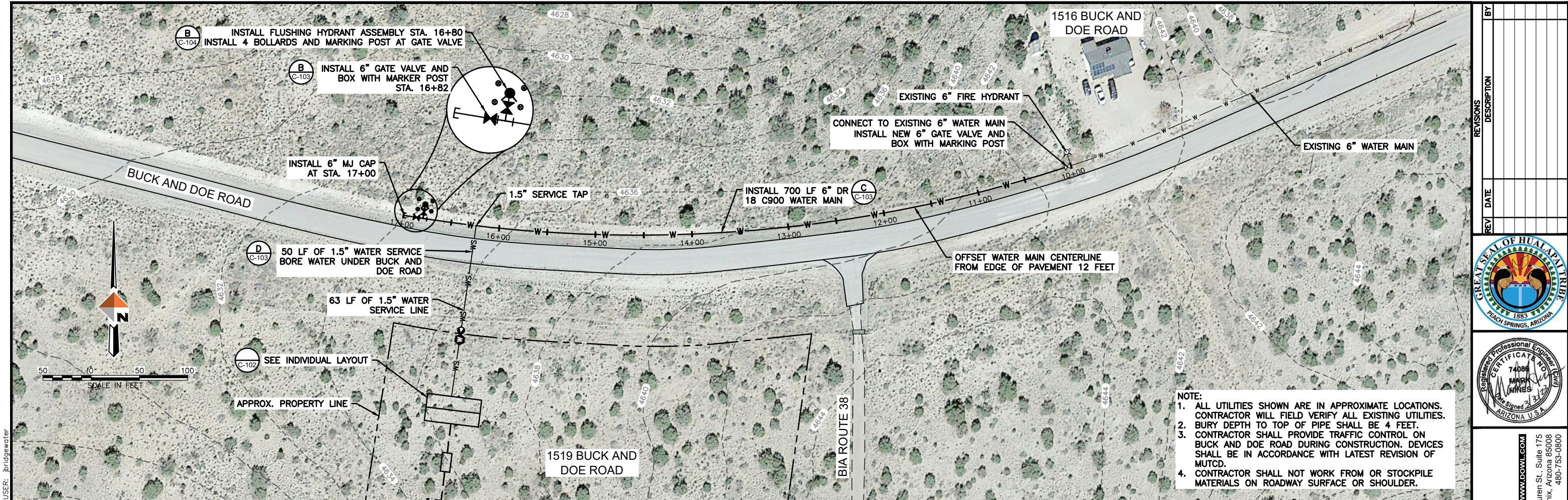
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WEST WATER PHASE 1A
WATER MAIN EXTENSION AND
WATER SERVICE LINE
NOTES AND LEGENDS

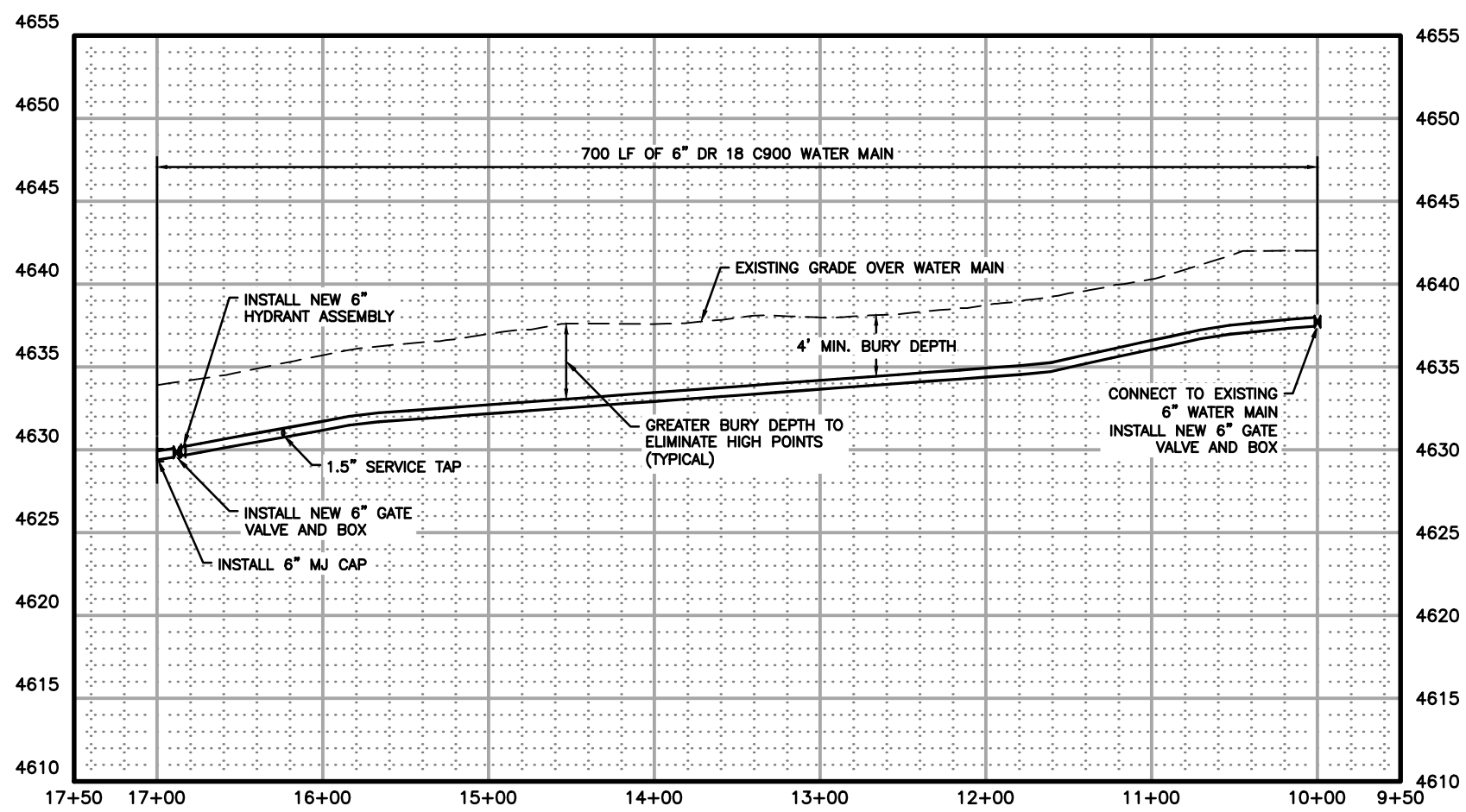
PROJECT 28.27098.01
DATE 03/30/2023

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G-002



- NOTE:**
1. ALL UTILITIES SHOWN ARE IN APPROXIMATE LOCATIONS. CONTRACTOR WILL FIELD VERIFY ALL EXISTING UTILITIES.
 2. BURY DEPTH TO TOP OF PIPE SHALL BE 4 FEET.
 3. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL ON BUCK AND DOE ROAD DURING CONSTRUCTION. DEVICES SHALL BE IN ACCORDANCE WITH LATEST REVISION OF MUTCD.
 4. CONTRACTOR SHALL NOT WORK FROM OR STOCKPILE MATERIALS ON ROADWAY SURFACE OR SHOULDER.



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WEST WATER PHASE 1A
 WATER MAIN EXTENSION AND
 WATER SERVICE LINE
 PLAN AND PROFILE

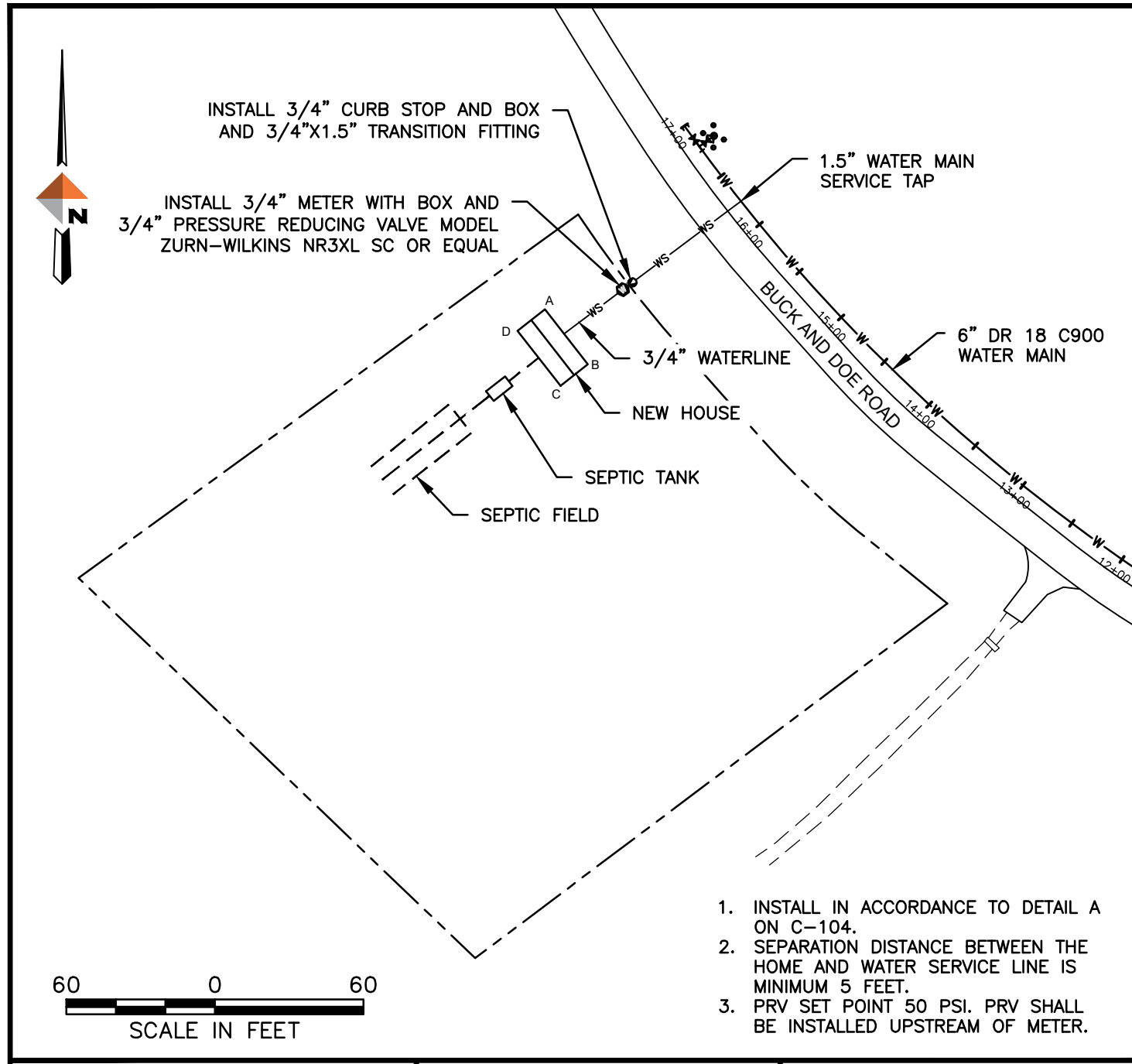
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SWING TIES, DISTANCE FROM PERMANENT STRUCTURES, (HOUSES, POWER POLES, ETC.) NOTE: LABEL STRUCTURES, CORNERS, ETC.

ITEM	A	B	C	D
2-WAY C/O#1				
2-WAY C/O#2				
3/4" CURB STOP				
METER BOX				
2-WAY C/O				
SEPTIC TANK				
4" TEE				
4"-90° BEND				

(2) SWING TIES PER ITEM.

WATER SERVICE

3/4" PE PIPE LENGTH	66 FT.
1.5" PE PIPE LENGTH	113 FT.
PVC PIPE SIZE(S)	00 IN.
PVC PIPE LEGNTH	00 FT.
3/4" CURB STOP(S)	1 EA.
GATE VALVE SIZE(S)	00 IN.
No. GATE VALVE(S)	00 EA.
No. OF METER(S) W/METER BOX	1 EA.
No. OF IDLER(S)	00 EA.
REMARKS:	

WASTEWATER SERVICE

4" SOLID PIPE LENGTH	FT.
SEPTIC TANK SIZE	GAL.
SEPTIC TANK MATERIAL	POLY
TOTAL INFILTRATION SECTION LINES	EA.
INFILTRATOR SECTION LINE LENGTH(S)	FT.
TRENCH WIDTH	FT.
TOTAL DRAINFIELD AREA	FT.
REMARKS:	



1519 BUCK AND DOE ROAD
 WATER SERVICE LINE CONNECTION
 NTS

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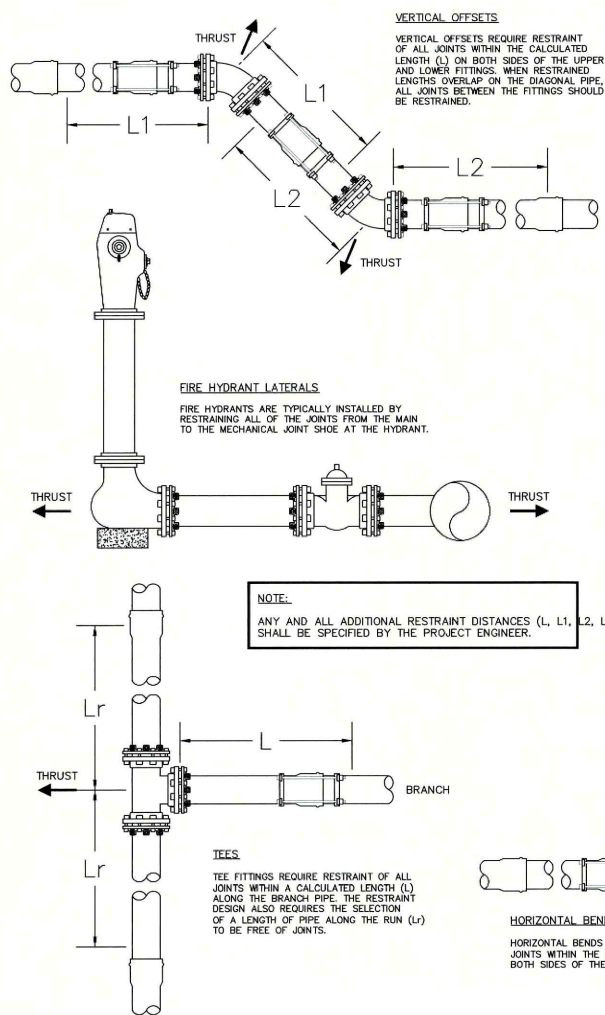
WEST WATER PHASE 1A
 WATER MAIN EXTENSION AND
 WATER SERVICE LINE
 INDIVIDUAL SITE LAYOUT

PROJECT 28.27098.01
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C-102

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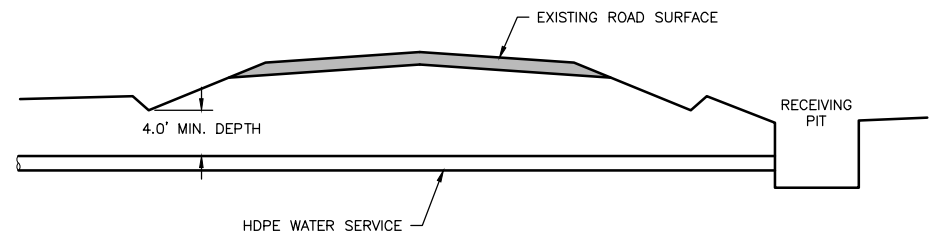
RESTRAINT LENGTHS FOR PVC PIPE MATERIAL

PIPE SIZE	HORIZONTAL BENDS			VERTICAL OFFSETS			TEE		FOR DEAD ENDS AND VALVES	REDUCERS	
	L	L1	L2	L1	L2	Lr	L	L		L	
12"	90°	35'				12 x 12 x 12	17'		99'	12 x 10	29'
	45°	15'		45'	41'	12 x 12 x 10	15.0	1'		12 x 8	52'
	22.5°	7'		22.5°	20'	12 x 12 x 8		1'		12 x 6	72'
	11.25°	4'		11.25°	10'	12 x 12 x 6		1'		12 x 4	86'
10"	90°	30'				10 x 10 x 12	54'		84'	10 x 8	28'
	45°	13'		45°	35'	10 x 10 x 10	10.0	30'		10 x 6	52'
	22.5°	6'		22.5°	17'	10 x 10 x 8		2'		10 x 4	68'
	11.25°	3'		11.25°	9'	10 x 10 x 6		1'		10 x 3	73'
8"	90°	26'				8 x 8 x 10	50'		70'	8 x 6	30'
	45°	11'		45°	29'	8 x 8 x 8	8.0	27'		8 x 4	50'
	22.5°	5'		22.5°	14'	8 x 8 x 6		1'		8 x 3	57'
	11.25°	3'		11.25°	7'	8 x 8 x 4		1'			
6"	90°	20'				6 x 6 x 10	58'		53'	6 x 4	28'
	45°	8'		45°	22'	6 x 6 x 8	8.0	38'		6 x 3	36'
	22.5°	4'		22.5°	11'	6 x 6 x 6		11'			
	11.25°	2'		11.25°	6'	6 x 6 x 4		1'			
4"	90°	14'				4 x 4 x 6	25'		38'	4 x 3	13'
	45°	6'		45°	16'	4 x 4 x 4	8.0	1'			
	22.5°	3'		22.5°	8'	4 x 4 x 3		1'			
	11.25°	2'		11.25°	4'						

RESTRAINED MECHANICAL PIPE JOINT APPLICATION CRITERIA

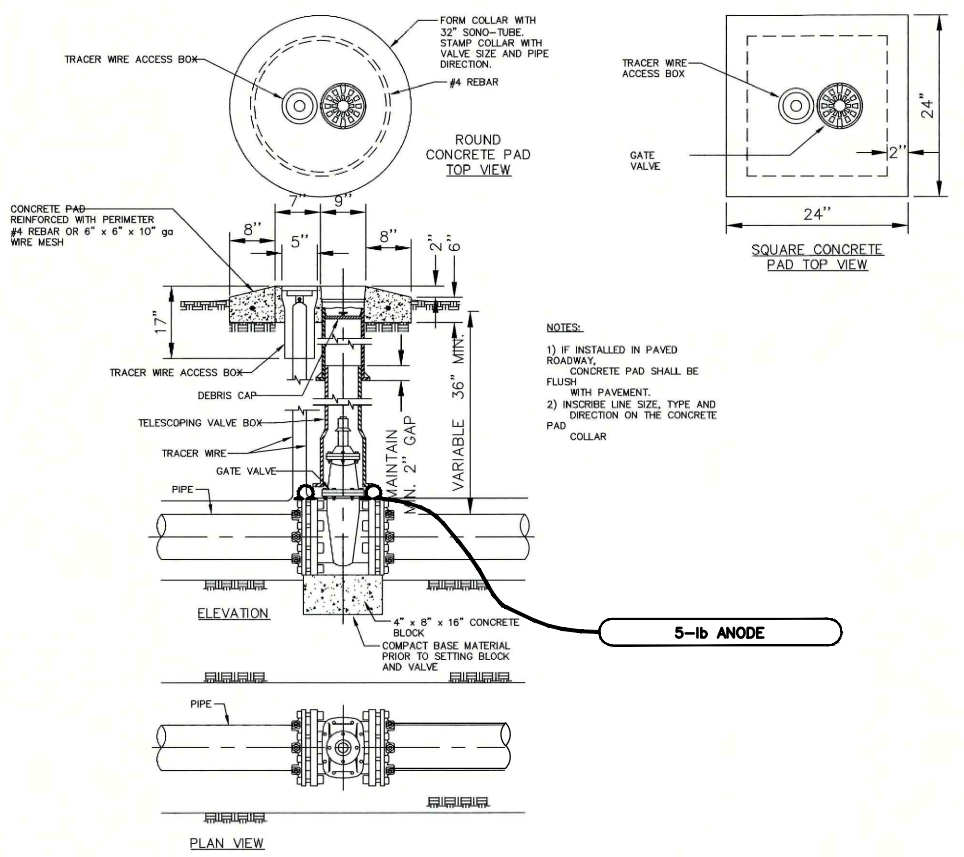
NOTES:
ALL ABOVE REFERENCED RESTRAINT LENGTHS, "L", SHALL BE CONSIDERED AS MINIMUM VALUES. ALL CALCULATED LENGTHS ARE BASED ON THE EBAA RESTRAINT LENGTH CALCULATOR AND ASSUME THE FOLLOWING:
1) SOIL TYPE IS SIMILAR TO GP (PER USCS), A POORLY GRADED GRAVEL-SAND MIXTURE WITH LITTLE OR NO FINES.
2) THE TEST PRESSURE IS 150 PSI.
3) THE FACTOR OF SAFETY IS 1.5 TO 1.
4) THE MINIMUM DEPTH OF BURY IS 3.0'.
5) THE PIPE IS PLACED IN A COMPACTED GRANULAR MATERIAL UP TO THE CENTERLINE OF THE PIPE, AND WITH A MINIMUM OF 4" BEDDING UNDER THE PIPE, AND COMPACTED SELECT MATERIAL UP TO THE TOP OF THE PIPE. ALL BEDDING AND COVER MATERIAL IS TO BE BACKFILLED AND COMPACTED IN ACCORDANCE TO TP 01.
6) TRENCH TYPE IS TYPE 4.
7) FOR VERTICAL OFFSETS, THE LOW SIDE DEPTH USED WAS 3.5 FT.
8) FOR ANY DIFFERENT VALUES OR CRITERIA, CONSULT WITH ENGINEER TO RECALCULATE REQUIRED RESTRAINT LENGTH.

A MECHANICAL RESTRAINED JOINTS
NTS



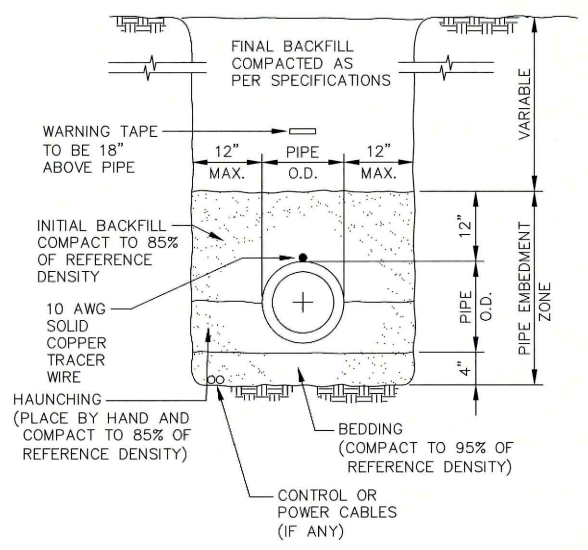
NOTES:
1. PIPE SIZE AND LENGTH OF BORE AS SHOWN ON PROJECT PLANS.
2. MAINTAIN LINE AND GRADE SHOWN ON PROJECT PLANS.
3. PRIOR TO CONSTRUCTION, PROVIDE TRAFFIC CONTROL PLAN SHOWING SIGN AND BARRICADE LAYOUT. NOTIFY AND COORDINATE WITH TRIBAL PUBLIC WORKS.
4. NO EXCAVATION WITHIN 5' OF EDGE OF ROAD.

D HORIZONTAL DIRECTIONAL BORE
NTS



B GATE VALVE WITH BOX
C-103 NTS

NOTES:
1. SPECIAL IMPORTED BEDDING AND HAUNCHING MATERIAL SHALL MEET THE CRITERIA OF THE UNIFIED SOILS CLASSIFICATION SYSTEM FOR GP, SW OR SP SOILS.
2. ATTACH TRACER WIRE TO PIPE 3 TIMES PER 20' PIPE LENGTH, MINIMUM.



C TYPICAL TRENCH SECTION
C-103 NTS

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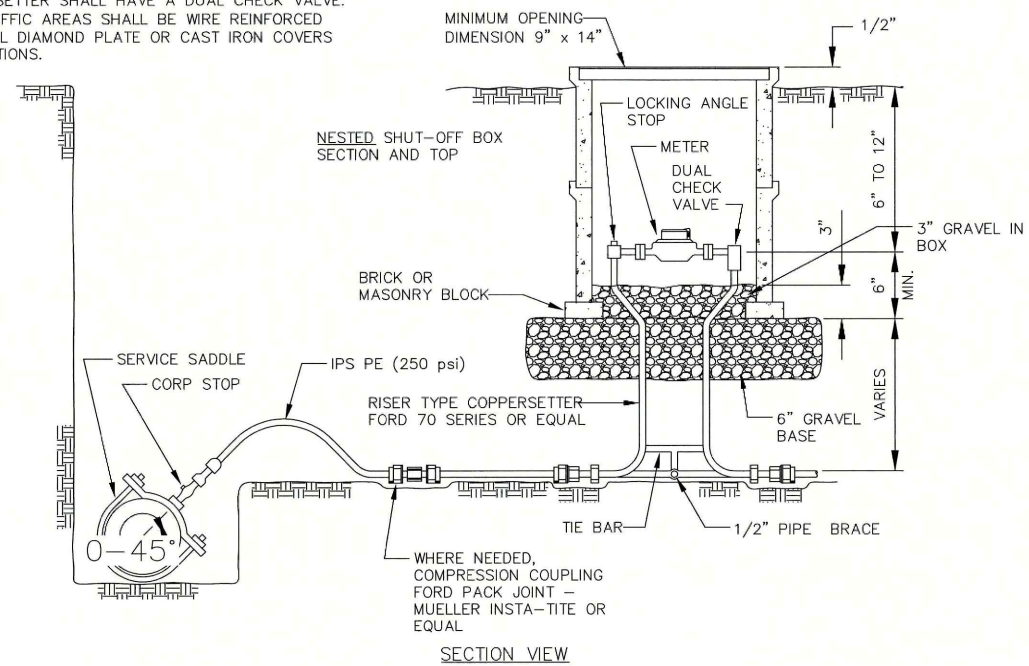
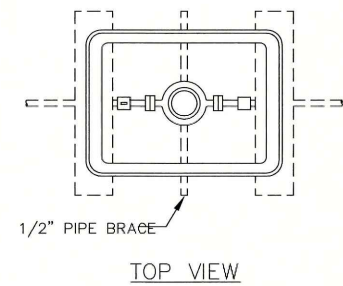
**WEST WATER PHASE 1A
WATER MAIN EXTENSION AND
WATER SERVICE LINE
DETAILS**

PROJECT 28.27098.01
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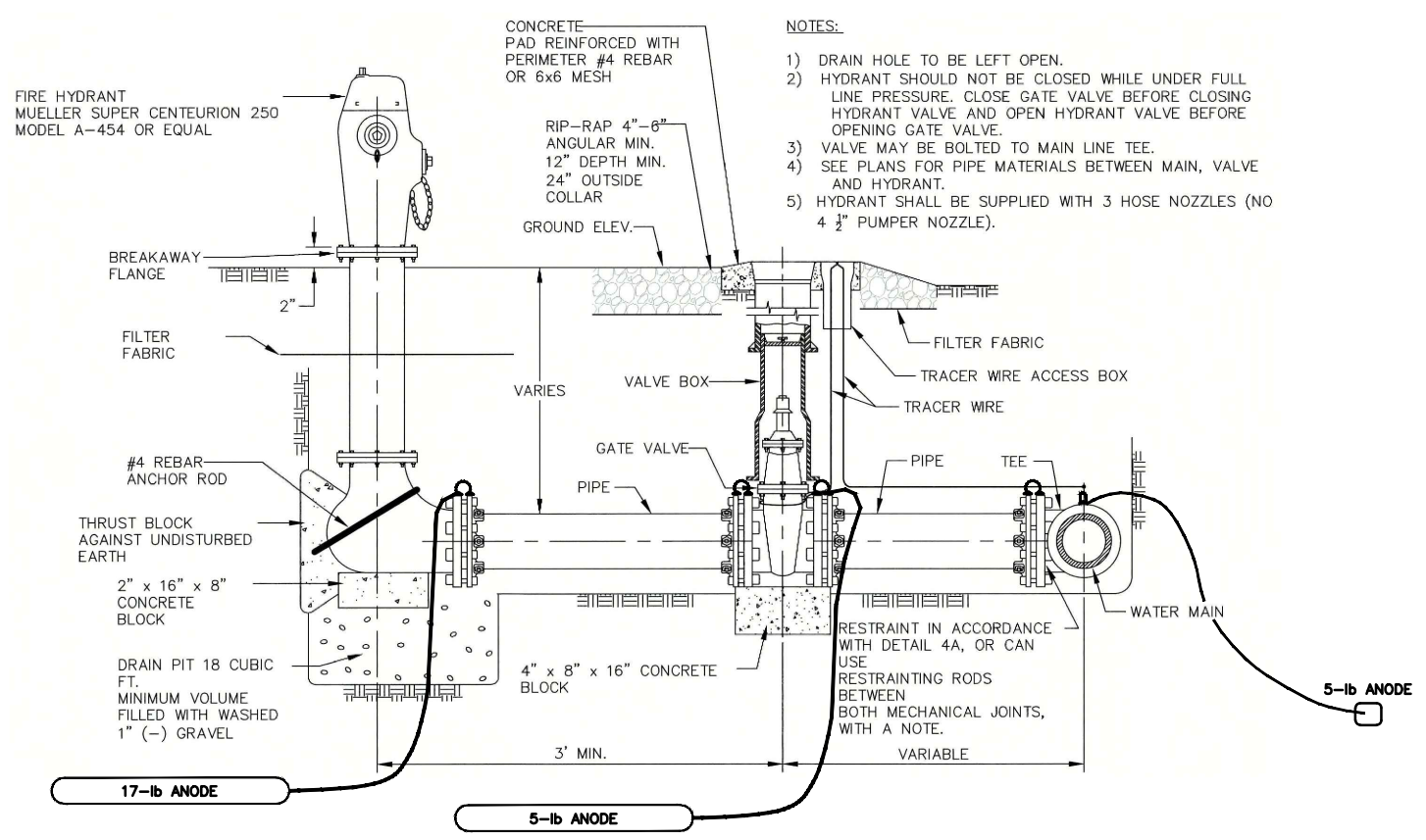
C-103

- NOTES:
- 1) MINIMUM HORIZONTAL DISTANCE BETWEEN WATER SERVICE LINE & SEWER SERVICE LINES SHALL BE 10 FEET.
 - 2) WATER SERVICE LINE BURY SHALL BE A MINIMUM OF 36 INCHES.
 - 3) POLYETHYLENE (PE) PIPE SHALL BE 1 INCH FOR SERVICE LINES LESS THAN 200 FEET & 1-1/2 INCHES FOR SERVICE LINES OVER 200 FEET AND LESS THAN 300 FEET.
 - 4) WATER SERVICE LINES SHALL NOT EXTEND BEYOND 300 FEET. IF NEEDED, 2 INCH PE. LATERALS SHALL BE INSTALLED TO EXTEND WATER SERVICE TO INDIVIDUAL HOMES.
 - 5) WATER METER BOX SHALL BE LOCATED AS DIRECTED BY OWNER.
 - 6) WHERE APPLICABLE, EXISTING WATER SERVICE LINES SHALL BE CONNECTED TO NEW WATER MAIN LINES USING A NEW SERVICE SADDLE AND CORPORATION STOP.
 - 7) TRACER WIRE AND WARNING TAPE SHALL BE INSTALLED ON ALL WATER SERVICE LINES FROM THE MAIN TO THE BUILDING.
 - 8) ALL THREADED FITTINGS (CORPORATION STOP, PE CONNECTORS) FOR PE PIPE ARE TO BE IPS THREADS. OTHER THREADS NOT ALLOWED.
 - 9) OUTLET TO COPPER SETTER SHALL HAVE A DUAL CHECK VALVE.
 - 10) METER BOXES IN TRAFFIC AREAS SHALL BE WIRE REINFORCED CONCRETE WITH STEEL DIAMOND PLATE OR CAST IRON COVERS WITH INTERLOCK SECTIONS.



NOTE: METER SETTER SHALL BE TANDEM TYPE.

A
C-104
NTS
WATER SERVICE LINE CONNECTION



- CATHODIC PROTECTION NOTES:
1. ALL DUCTILE IRON APPURTENANCES SHALL BE EPOXY COATED AND LINED PER THE SPECIFICATIONS AND SHALL HAVE A PRE-PACKAGED ZINC ANODE ATTACHED AS SHOWN. HYDRANTS SHALL HAVE 17-LB ANODE; VALVES AND FITTINGS 5-LB ANODE.
 2. CONNECT ANODES DIRECTLY TO APPURTENANCES BY EXOTHERMIC WELDING AND HANDY CAP COVER. FOLLOW ALL MANUFACTURER INSTRUCTIONS.
 3. INSTALL BONDING LEADS ACROSS ALL INNER AND OUTER FLANGES OR MJ GLANDS. USE #18-HMWPE BLACK STRANDED COPPER WIRE APPROXIMATELY 12 INCHES IN LENGTH.
 4. PLACE ANODES HORIZONTALLY AT THE SAME GRADE AS PROTECTED FITTING AND PARALLEL TO PIPE.
 5. PLACE ANODES A MINIMUM OF 5' FROM WATER PIPE.
 6. ANODE SHALL BE BEDDED IN NATIVE BACKFILL FREE OF ROCKS AND DEBRIS A MINIMUM OF 6 INCHES BELOW, ABOVE AND AROUND.
 7. ACTIVATE ANODE BY POURING 5 GALLONS OF WATER ON IT.

B
C-104
NTS
FLUSH HYDRANT WITH GATE VALVE

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WEST WATER PHASE 1A
WATER MAIN EXTENSION AND
WATER SERVICE LINE
DETAILS

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