

INCORPORATED COUNTY OF LOS ALAMOS

BID AND SPECIFICATIONS



LOS ALAMOS

BATHTUB ROW RECONSTRUCTION PROJECT

INVITATION FOR BIDS NO. IFB24-74

Advertised on May 31, 2024

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1.0 BIDDING PHASE

1.1 Invitation for Bids

The Incorporated County of Los Alamos (“County”) reserves the right, in its sole discretion, to accept any bid and to reject any or all bids.

Bids are invited from all responsible bidders.

Bid documents for this project may be obtained by contacting the Office of Purchasing Officer at:

Derrill Rodgers, Deputy Chief Purchasing Officer
Los Alamos County
Procurement Division
101 Camino Entrada, Building 3
Los Alamos, New Mexico 87544
505-662-8056 or Cell: 505-709-5503

Bid documents for this project may be downloaded from the following website:

<https://losalamosnm.egnyte.com/fl/qETLP9oz7P>

Copies of Bid Documents and Addenda will be made available for review wherever Solicitation Documents are on file for that purpose. Bid details can be found on the County website under “Doing Business” and “Bids & RFPS” or the following URL Link:

<https://lacnm.com/bids>

Bids in response to this Invitation for Bids (IFB), may be submitted either in paper form, in a sealed envelope, or electronically by email in PDF format. All other requirements stated in the solicitation document remain unchanged and in effect.

1. **ELECTRONIC SUBMISSION:** Emails should be addressed to: lacbid@lacnm.us.

**Subject line must contain the following information:
RESPONSE – IFB24-74 Bathtub Row Reconstruction Project**

It is strongly recommended that a second, follow up email (without the Bid included or attached) be sent to derrill.rodgers@lacnm.us to confirm the Bid was received.

The body of the email must contain enough information for the identity of the Bidder to be clear, including company name, name of person sending the email, and contact information including email address and phone number.

Only emails with Bids received in the lacbid@lacnm.us email box prior to **2:00 p.m. MDT, June 21, 2024**, will be reviewed.

Bids submitted by email will be opened only after the closing date and time stated in the solicitation document.

2. **PAPER FORM SUBMISSION:** Sealed bids, submit one (1) unbound original and five (5) copies, subject to the conditions set forth in the Instructions to Bidders and in the other Solicitation Documents, will be received at the office of the Los Alamos County Purchasing

Officer, 101 Camino Entrada, Building 3, Los Alamos, New Mexico, until **2:00 p.m. MDT, June 21, 2024**, and then publicly opened for the following project:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
Bathtub Row Reconstruction Project**

Bid security in the amount of five percent (5%) of the bid must accompany the bid. Such cash, certified checks or bid bonds will be returned to all except the three finalist bidders within three days after the opening of bids. The remaining cash, checks and bid bonds will be returned promptly after the County and the accepted Bidder have executed the contract, or if no award has been made within sixty (60) days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as Bidder has not been notified of the acceptance of Bidder's bid. In submitting their Bid Bond, it is not mandatory that Bidders use the Bid Bond form provided in the packet. The County strongly encourages all Contractors to use this form, but if the contractor elects not to use it, the Bid Bond must be submitted on a form acceptable in the construction industry and approved by the County Project Manager in advance of the bid due date.

A Non-Mandatory Pre-Bid Conference will be held on Tuesday June 4, 2024, at 10:00 a.m. via Microsoft Teams. Please contact Derrill Rodgers (please see contact information below) to receive link via Addendum for the Pre-bid Conference.

This conference is held to answer questions from the prospective bidders as well as familiarize bidders with the project. Questions regarding the meaning of plans, specifications or other documents related to the project should be submitted in writing prior to the pre-bid conference. The County will preside at the pre-bid conference and provide for the recording and distribution of minutes. The pre-bid conference will include, but not be limited to the following:

1. Discussion of schedule for procurement, progress, values for progress payments and submittals.
2. Critical work sequencing and priorities.
3. Use of construction site premises, storage areas, office areas, security, cleaning, and County's needs.
4. Transmittal, review, and distribution of submittals.
5. Field decision process.
6. Maintain record documents.
7. Public Information.

For questions and interpretations of the roadway bid items shall be addressed to:

James M. Malcom, Project Manager
Public Works Department
1000 Central Avenue, Suite 160
Los Alamos, New Mexico 87544
Phone Number: 505-927-2931
Email: james.malcom@lacnm.us

For questions and interpretations of the utility bid items shall be addressed to:

Casey Aumack, Utility Project Manager
Department of Public Utilities
1000 Central Avenue, Suite 130
Los Alamos, New Mexico 87544
Phone Number: 505-663-1830
Email: casey.aumack@lacnm.us

Any questions must be received in writing at least six (6) working days (Monday-Friday) prior to the date fixed for the opening of bids. Failure of any bidder to receive any addendum or interpretation shall not relieve such bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the solicitation documents.

The County reserves the right to issue addenda to the solicitation documents including construction specifications and plans during the advertising period as provided in the solicitation documents. Bidders are responsible for determining if any addenda have been issued. The terms, bid and solicitation are interchangeable. Also, the terms contract and agreement are interchangeable.

For the County of Los Alamos Procurement Division:

By: Derrill Rodgers
Title: Deputy Chief Purchasing Officer
Phone Number: 505-709-5328
E-mail: derrill.rodgers@lacnm.us

1.2 Summary of Work

**Incorporated County of Los Alamos
Bid Number: IFB24-74
Bathtub Row Reconstruction Project**

This project is issued by and under the control of The Incorporated County of Los Alamos. The contracting office is the Public Works Department. The location of the project is in the County of Los Alamos, New Mexico.

The summary of work is as follows, but is not limited to the following:

Part 1 Project Scope of Work:

- Roadway: The project consists of a full reconstruction of Bathtub Row between Central Avenue and Peach Street, a segment of Peach Street, and Nectar Street from Peach Street to 15th Street.

The scope of work includes removal of existing asphalt surface and base course and replacement with new base course and 4-inch asphalt surface, targeted curb and gutter, sidewalk, ADA ramps with detectable warning surfaces, drive pads, utility valve adjustments, sewer manhole cover adjustments, and lighting. (Roadway Reconstruction: Approx 2,250 feet in length and varies between 18 feet to 28 feet wide)

- Utilities: Includes rehabilitation of aging gas lines and gas services. Replacement of both transmission and distribution water lines, new gate valves, water service lines, and new fire hydrants.
- Bid Alternate 1 (Parking Lots): Reconstruction of two parking lots for Fuller Lodge.
- Bid Alternate 2 (Little Theatre): Removal and replacement of the sidewalks and ADA ramps for the Little Theatre located on Nectar Street.
- Bid Alternate 3 (Broadband): Installation of broadband conduit and vaults along Bathtub Row and Nectar Street.

Part 2 Work Sequence:

- A. The Contractor shall prepare and submit for approval a logical construction sequence and traffic control plan. Once approved, the contractor shall execute the sequenced construction plan as submitted and resubmit for approval any revisions needed to allow for constructability purposes.

The Contractor shall furnish all materials, and supplies required to complete the work. All materials incorporated into the project shall have certificates of compliance and required testing results submitted for approval by the County, before final acceptance of the project.

Part 3 Incidental Work:

- A. Contractor shall provide, as part of the contract price, all labor, superintendence, machinery, equipment, supplies, temporary utility services, third party compliance testing and analysis, necessary to complete the various items of work in accordance with these contract documents, to provide a complete, functional, and ready-to-use installation.
- B. Contractor shall, as part of the contract price, acquire all necessary approvals for access to all project sites.
- C. Contractor shall, as part of this contract price, furnish all environmental protection including, but not limited to all necessary work to prevent storm water and other environmental pollution on any construction site or adjacent areas, as well as anywhere in the vehicle and pedestrian routes used by the contractor's vehicles and equipment.
- D. Contractor shall be responsible for the restoration, reseeding/replanting and cleanup of any areas affected by the project, including any work and materials and labor necessary to return the project site(s) to its original state (prior to construction), by removing all evidence of construction debris, repairing all damage to vegetation, landscapes and finished ground surfaces, scarifying any hard-pack and driven-over earth areas, reseeding any areas disturbed by the contractor's construction activities, and installing erosion protection as indicated on the drawings, or as required by Contractor's Stormwater Pollution Prevention Plan ("SWPPP").
- E. Contractor is responsible to attend, at no additional cost to the Owner, the following meetings:
 - a. Preconstruction meeting to be scheduled by Owner.
 - b. Weekly progress meetings held at the Project Managers request.
 - c. Special and final field observation meetings when requested or scheduled by the Owner.
 - d. Construction coordination meetings requested or scheduled by the County.
 - e. Stakeholder/utility customer meetings when deemed necessary by the County to keep them informed or to resolve unanticipated concerns.

Project Dates (Start and Substantial Completion) are as follows:

- A. Project to start on or before – August 12, 2024
- B. Substantial Completion (Mandatory Substantial Completion Base Bid Only) – July 31, 2025.
- C. Substantial Completion (Mandatory Substantial Completion Base Bid with Bid Alternates Awarded) – August 30, 2025.
- D. Project Final Completion with or without Bid Alternates Awarded – September 30, 2025.

Pre-Bid Meeting	June 4, 2024
Bids Due	June 21, 2024
Bid Award	July 31, 2024
Pre-Construction Meeting	August 12, 2024
Notice to Proceed	August 12, 2024
Phase 1 and Bid Alternate 1 (if awarded) Mandatory Substantial Completion	Prior to Winter Suspension
Mandatory Substantial Completion Date for Base Bid	July 31, 2025
Mandatory Substantial Completion Date for Base Bid w/ Bid Alternative Awarded	August 30, 2025
Mandatory Final Completion Date	September 30, 2025
*The dates listed above are tentative and subject to change.	

Restrictions to Dates and Times for Work Zones: Due to scheduled events (Section 1.4.7), restrictions on construction activities on the phases as outlined below shall be followed:

Base Bid

- Phase 1 Mandatory Substantial Completion: Bathtub Row from Central Ave to Approximate Station 107+60 with additional work zones for utilities at the Mesa Public Library and at the Senior Center areas. The following Phase I activities shall be complete prior to winter suspension: All roadway reconstruction, concrete work, and water distribution tie-ins.
- Phase 2 Bathtub Row from Approximate Station 107+60 to Peach Street and Peach / Nectar Street from Rose Street to 15th Street with additional work zones on 15th street and 19th Street. [Note: If started prior to winter, must be substantially complete prior to going on a Winter Suspension unless a logical end point is agreed to by the Project Manager].

Bid Alternates (If awarded)

- Bid Alternate 1 Parking Lots at Fuller Lodge will need to be constructed with coordination of events and agreed to by the Project Manager. [Note: if started prior to winter it must be substantially complete prior to going on a Winter Suspension unless a logical end point is agreed to by the Project Manager].
- Bid Alternate 2 Little Theatre sidewalks and ADA ramps to be constructed during Phase 2.
- Bid Alternate 3 Broadband to be constructed during phase 1 and 2.

Partial or Full Suspension for Winter: Project date assumes a partial suspension or full suspension for winter weather conditions and the inability to complete work due to specification temperature requirements. Note: The Contractor shall submit a cold weather concrete and

curing plan to the Project Manager for approval by the County Engineer before cold weather concrete placement. The Contractor shall allow 14 Days for review. The Contractor shall ensure that the plan specifies the methods and equipment used to maintain the required concrete temperatures over the entire concrete pour area.

No open excavations are to be left during the suspension period. No processing of roadway pavement is permitted unless all paving can be completed prior to winter suspension. All roadways and pedestrian facilities shall be fully open prior to the beginning of the suspension. The Contractor is responsible for periodic inspection of the project limits during the winter suspension period at no additional cost to the County.

Liquidated Damages for Work: Failure to complete all work on time will result in Liquidated Damages applied to this contract in accordance with the current edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction section 108, Table 108.8:1 Schedule of Liquidated Damages. Liquidated damages will be charged per day for failure to complete work by any of the substantial and/or final completion dates listed.

1.3 Requirements for Bidders

Bids must be made with the understanding and in accordance with these conditions for bidders:

1.3.1 Bid Evaluation Criteria

Bid acceptance and bid evaluation. Bids shall be unconditionally accepted without alteration or correction, except as authorized in this article. Bids shall be evaluated based on the requirements set forth in the IFB, which may include criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery, and suitability for a particular purpose. Those criteria that will affect the bid price and be considered in evaluation for award shall be objectively measurable, such as discounts, transportation costs, and total of life cycle costs. The IFB shall set forth the evaluation criteria to be used. Only criteria that are set forth in the IFB may be used in bid evaluation. Interviews are to be used only for the purpose of clarification. The final evaluation results shall be forwarded to the purchasing agent.

The evaluation criteria for this Bid are:

1. Accurate submission of Bid Response Documents
2. Cost

The County may make such investigations as deemed necessary to determine the ability of the Bidder, and any prospective subcontractors of the Bidder, to perform the work, and the bidder shall furnish to the County all such information and data for this purpose as the County may reasonably request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the County that such Bidder is properly qualified to carry out the obligations of the Contract and to timely complete the work contemplated herein. Conditional bids may not be accepted in the sole discretion of the County.

1.3.2 Required Bid Response Documents

The bidder shall follow the instructions described in Section 1.1 Invitation for Bids.

1.3.3 The Bidder's Bid Response Documents

The following documents must be completed and included in this preferred order:

1. Copy of Bidder's State of New Mexico Contractor's License(s) with proper classifications.
2. Bid Form (Section 1.5.1)
3. Alternatives and Allowances, if applicable (Section 1.5.2)
4. List of Subcontractors (Section 1.5.3).
5. Bid Bond (Section 1.5.4)
6. Campaign Contribution Form (Section 1.5.5)
7. Certification – Debarment, Suspension, and other Responsibility Matters (Section 1.5.6)
8. Permanent Main Office Address of Company (Section 1.5.7) – Note requirement to provide a Certificate of Good Standing and Compliance from the New Mexico Secretary of State, if incorporated.
9. Authorization for Verification of Information (Section 1.5.8)
10. Provide proof of online registration and payment of \$400.00 for Certificate of Contractors Registration (Section 1.5.9) with New Mexico Department of Workforce Solutions.

The County may consider a bid to be non-responsive or non-responsible if the Contractor fails to include any of the items described in items 1 through 10, above.

1.3.4 Liquidated Damages for Failure to Enter into Contract

The successful Bidder, upon failure or refusal to execute and deliver the Contract and required Bonds within ten (10) calendar days after Bidder has received the Notice of Award, shall forfeit the Bidder's Bond to the County, as liquidated damages for such failure or refusal, the bid security deposited with Bidder's bid.

1.3.5 Conditions of Work

Each bidder must inform itself fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of its obligation to furnish all material and labor necessary to carry out the provisions of the Contract. Insofar as possible, the Contractor in carrying out the Work must employ such methods or means as will not cause any interruption of, or interference with the Work of any other contractor, or the daily operations of County offices. The Work in this Contract shall adhere to Los Alamos County Noise Ordinance. Noise Ordinance Waivers are required for work occurring between the hours 9:00 p.m. and 7:00 a.m.

1.3.6 Addenda and Requests for Interpretation

- A. No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally and bidders understand that no oral interpretation once made may be relied upon. Every request for such interpretation

shall be in writing addressed to the Project Manager. Requests for interpretation must be received at least six (6) working days (Monday-Friday) prior by 5:00 p.m. to the date fixed for the opening of bids. Failure of any bidder to acknowledge all addenda on the Addendum Acknowledgement Form shall not relieve such bidder from any obligation under its bid as submitted and may render the bidder non-responsive. Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall specifically acknowledge their receipt in the bid. All addenda so issued shall become part of the Contract documents.

- B. Addenda will be e-mailed to all who are known by the County to have requested Bid Documents.
- C. No Addenda will be issued later than four (4) working days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

1.3.7 Power of Attorney

Attorneys-in-Fact who sign any required bonds must file with each bond a certified properly executed and dated copy of their power of attorney.

1.3.8 Obligation of Bidder

Complete sets of Solicitation Documents must be used in preparing Bids; neither the County nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Solicitation Documents.

The Submission of a bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bid, which without exception the Bid is premised upon performing and furnishing the Work required by the Solicitation Documents. The bidder will be required to establish to the satisfaction of the County the qualifications and capability of the persons proposed to furnish and perform the Work described in the Solicitation documents. Contractor, by signing the Bid also acknowledges that the Contract Time is reasonable for the weather and climactic conditions.

Prior to the award of the Contract, the County will notify the bidder in writing if the County after due investigation has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid, or (2) submit a substitute person or entity acceptable to the County with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost, if any, occasioned by such substitution. The County may accept the adjusted bid price. In the case that the adjusted price makes them no longer the low bidder, County reserves the right to award to the subsequent low bidder. In the event of withdrawal, bid security will not be forfeited. Persons proposed by the Bidder and to whom the County has made no reasonable objection must be used to perform the Work for which they were proposed and shall not be changed except with the prior written consent of the County.

1.3.9 Safety Standards and Accident Prevention

With respect to all work performed under this contract, the Bidder shall:

- A. Comply with the standard provisions of the most current versions of all applicable laws, rules and regulations that apply to the work contracted for.
- B. Provide a Safety Management Plan to the County after award acceptable to the Project Manager (see Section 3).

1.3.10 Substitutes or Brand Name or Equal

During solicitation, it may be determined that a “brand name or equal” is in the County’s best interests, and in many cases is the “Basis of Design” for a particular item or system. The Contractor may provide a substitution of a particular item or items. The Contractor shall provide proof that the proposed substitute item is equal to or exceeds the basis of design. The County reserves the right to accept or reject the substitution at its sole discretion.

All re-design and evaluation costs that may be incurred shall be paid by the Contractor.

The Contractor shall provide an alternate bid based on the original plans and specifications and shall provide separately the cost for the substituted item, which the County reserves the right to accept or reject.

The procedure for submission of any such application by Contractor and consideration by County is set forth in Section 3.

1.3.11 Bids to Remain Subject to Acceptance

All bids will remain subject to acceptance for sixty (60) calendar days after the day of the Bid Opening. The County may, in its sole discretion, release any Bid and return that Bidder’s Bid Security prior to that date. County may request an extension, agreeable to both the Bidder and County.

1.3.12 Withdrawal of Bids

- A. Bidder may withdraw its bid by written notice and received by Purchasing Agent prior to bid opening.
- B. After bid opening, no changes in bid prices or other provisions of bids prejudicial to the interests of the County or fair competition shall be permitted. In lieu of bid correction, a low bidder alleging a material mistake of fact may be permitted to withdraw its bid if: (1) The mistake is clearly evident on the face of the bid document; or (2) The Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

1.3.13 Acceptance or Rejection of Bids

The County reserves the right to accept any bid, reject any or all bids without cause, to waive any or all technicalities in any Bid in the interest of the County and the right to reject all non-conforming, non-responsive or conditional Bids.

1.3.14 Award

Bids shall be evaluated based on the requirements set forth in the IFB, which may include criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery and suitability for a particular purpose and the Contract shall be awarded on the basis of the lowest responsible and responsive bidder in accordance with Chapter 31-101 (i) of the Los Alamos Code of Ordinances.

1.3.15 Registration of Contractors and Subcontractors

Any bidder that submits a bid valued at more than the dollar amount required by the New Mexico Public Works Minimum Wage Act [13-4-11 through 13-4-17 NMSA 1978] and the New Mexico Subcontractors Fair Practice Act [13-4-31 through 13-4-43] for a public works project shall be registered with the labor and industrial division of the labor department. County will not accept bids for a public works project subject to the New Mexico Public Works Minimum Wage Act from the contractor that does not provide proof of required registration for itself and its subcontractors.

1.3.16 Procurement Preferences

Sec. 31-261. - State and local preferences.

- (a) *Definitions.* For the purposes of this section:
- (1) The terms "resident business" and "resident veteran business" shall be defined as set out in NMSA 1978, § 13-1-21;
 - (2) The term "local" as applied to a business shall mean that it meets the requirements of the above definition, maintains its principal office and place of business in Los Alamos County, and has a required Los Alamos County business license.
- (b) *Requirements for preference qualification.* The chief purchasing officer shall determine if a preference is applicable to a particular bid or offer on a case-by-case basis. A bidder or offeror must submit a written request for preference, with a copy of the state-issued preference certificate, with its bid or proposal to qualify for this preference.
- (1) If a corporation, it shall be incorporated in New Mexico and maintain its principal office and place of business in the state;
 - (2) A person shall have qualified with the state chief purchasing officer as a resident business or resident veteran business and obtained a certification number as provided in NMSA 1978, § 13-1-22.
- (c) *Preference factor.*
- (1) The preference factor for qualifying resident and local businesses applied to bids and proposals shall be five percent.
 - (2) The preference factor for qualifying resident veteran businesses shall be in accordance with the requirements set forth in NMSA 1978, § 13-1-21.
- (d) *Invitations for bids.* When bids are received, the price quoted by the qualifying vendor shall be multiplied by 0.95. After application of the preference factor, the contract shall be awarded to the lowest bidder. If one or more low prices are equal, the bid shall be awarded with respect to the next category of offerors listed below, and the next, until an offer qualifies for award. The priority of categories of offers is as follows:
- (1) Local business;

- (2) Resident business.
- (e) *Requests for proposals.* When proposals are received, the total evaluation score with or without the cost factor of each proposal received from a qualifying vendor shall be multiplied by 1.05. After application of the factor, the contract shall be awarded to the highest score. If one or more scores are equal, the same procedure shall be followed with respect to the next category of offerors listed, and the next, until an offer qualifies for award. The priority of categories of offerors is the same as listed in subsection (d) of this section.
- (f) *Exemptions from preferences.* The resident and local preference specified in this article shall not be applied:
 - (1) To requests for qualifications;
 - (2) To any purchase of goods or services in excess of \$500,000.00;
 - (3) When the expenditure of federal funds designated in whole or in part for a specific purchase is involved; or
 - (4) When the expenditure of grant funds, a condition of which prohibits a local preference, is involved.

(Ord. No. 02-098, § 2, 12-2-2008; Ord. No. 02-305, § 8, 2-25-2020)

1.4 Notices to Contractors

1.4.1 Applicable Law

Work shall be performed in accordance with applicable federal, state, and local laws (Los Alamos County Code of Ordinances, Section 31.2 Procurement Code).

1.4.2 Gross Receipts Tax

All bids submitted are to exclude the applicable gross receipts taxes. County will pay the applicable taxes to the Contractor including any increase in the applicable taxes becoming effective after the execution date of the contract. The applicable gross receipts taxes will be shown as a separate amount on each payment application made under the contract. The Contractor is responsible for payment to the State of New Mexico for all gross receipt's taxes collected.

1.4.3 Minimum Wage Rates

Pursuant to the New Mexico Public Works Minimum Wage Act, Section 13-4-11 through 13-4-17 NMSA 1978 (comp.) all certified payrolls submitted must contain required information as stated on the pertinent information sheet of the Wage Rate Decision issued on said project.

The Contractor, Sub-contractor and all tiers shall provide the Statement of Intent to Pay Prevailing Wages form to County's Project Manager.

1.4.4 Work Conditions

This contract will be performed in and adjacent to Los Alamos County for the contract duration specified in the Contract. The Contractor shall be aware of the conditions that may normally exist within the project area during performance of the work. Those conditions may include but are not limited to:

- Extended freezing temperatures,

- Intense rainfall events,
- Snowfall and snow accumulation,
- Limited direct sunlight.

Delays due to normal weather conditions are not eligible for time extensions and/or additional compensation. Contractor is required to protect their work and the project from normal weather events. Unusual weather-related time extensions may be awarded by the County pursuant to an approved change order at the County's sole discretion. Please refer to Section 2, Contract Articles 2 and 3.

1.4.5 Public Information

The Contractor is required to be an active participant in the execution of the Public Information and Involvement Plan (PIIP) as developed by the County. The County retains edit and approval rights to any documents being released to the public and requires two (2) working days advance notice to allow for said edit/approval. Contractor will perform/assist the County in successfully implementing the PIIP activities that may include, but not be limited to:

- Weekly updates by Wednesday noon of traffic control expected on this project for the following week;
- Placement of door hangers 48 hours prior to any Utilities service disconnections (gas, water, and electric);
- Five (5) working days advance notification to Project Manager regarding impacts to school or transit bus stops and safe routes to schools.
- Inform businesses and residents 48 hours prior to direct impacts during construction.
- County policy is to advertise in the local newspaper in advance of posting traffic control signs or barricades. The Contractor will submit information concerning posting of traffic control signs and barricades at least five (5) working days in advance to the Owner.

Project Manager shall determine the need, size, and location for a project sign(s) that may include the following:

1. Project name
2. Contractor business name and contact information
3. Budget
4. Project start and end months
5. County Project Manager contact information
6. A rendering of the improvement(s) if available.

1.4.6 Project Liaison

The Contractor shall provide a designated project 'Liaison' that will always represent LAC and the Contractor in regard to the general traveling public and be responsible for public communication with residents' questions and concerns pertaining to the Project. This liaison shall also be responsible for project duties such as passing out fliers, informing residents of impacts to their services and/or homes, be the point of contact with the Project Manager when issues arise.

The ‘Liaison’ shall also be responsible for reporting to the Contractor’s TCS (Traffic Control Supervisor) should traffic related issues effect the travelling public.

1.4.7 Important Dates

The Contractor is to keep the following dates in mind during the construction phasing/scheduling of the project. The Contractor may have to make adjustments and accommodations to work zone prior to and during the events for pedestrians and vehicle access. See Section 1.2 for Restrictions to Dates and Times for Work Zones that account for the majority of these events.

- 2024 Summer Arts and Crafts Fair – August 10-12, 2024 (Fuller Lodge Grounds)
- 2024 Fair & Rodeo Parade - August 12, 2024 (Central Ave & Ashley Pond)
- 2024 Los Alamos Homecoming Parade – September 20, 2024 (Central Ave)
- 2024 Fall Arts and Crafts Fair – September 29-30, 2024 (Fuller Lodge Grounds)
- Day of Arts and Culture - October 5, 2024 (Fuller Lodge Grounds)
- Holloweekend - October 25-27, 2024 (Fuller Lodge Grounds and Various Roadways)
- Election Day November 5, 2024, and early voting starting October 19, 2024 (Betty Ehart Senior Center)
- Small Business – Saturday, November 30, 2024
- Winter Fest - December 6-8, 2024 (Fuller Lodge Grounds and Various Roadways)
- 2025 Spring Arts and Crafts Fair – May 2025 (Fuller Lodge Grounds)
- 2025 Sciencefest - July 2025 (Ashely Pond and Fuller Lodge Grounds)

1.4.8 Performance and Labor and Material Bonds Requirements

Performance Bond and Labor-Materials Bond shall be executed after receipt of Notice of Award to the successful bidder in an amount equal to one hundred percent (100%) of the total amount payable by the terms of the contract. The Bonds must be prepared and executed on the Performance Bond and Labor-Materials Bond forms attached hereto or on such other forms as may be approved in writing by the Owner. Surety shall be by a company licensed to do business in the State of New Mexico and acceptable to the Owner.

1.4.9 Fitness for Work and Drug and Alcohol Policy

If, at any time, personnel of the Contractor’s workforce are deemed unfit for work in a manner resulting in an unsafe condition by the Owner, or Owner’s representative, it shall be brought to the attention of the Contractor’s Superintendent. It is the Contractor’s responsibility to remove said personnel for action in accordance with the provided Safe Work Practices and/or Safety Program documentation, and/or Drug and Alcohol Testing Program.

The Contractor shall have and provide an active and documented Drug and Alcohol Testing Program, as well as a Safe Work Practices and/or Safety Program as a submittal to the Project Manager for review and acceptance.

1.4.10 Bid Bond

In submitting their Bid Bond, it is not mandatory that Bidders use the Bid Bond form provided in the packet. The Owner strongly encourages all Contractors to use this form, but if the Contractor elects not to use it, the Bid Bond must be submitted on a form acceptable in the construction industry and approved by the Owner’s Project Manager in advance of the bid due date.

1.4.11 NMDOT Standard Specifications

The New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction, 2019 Edition shall govern construction of this Project except as modified in the Special Provisions, and Supplemental Technical Specifications. These specifications do not apply to utility work which, in most cases, occurs beneath the road prism.

1.4.12 Utility Specifications and Quantities

The Utilities Specifications are in Section 3.3 - Department of Public Utilities Technical Specification 101 - 601 and take precedent over New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction. All estimated utility quantities for unit price items stipulated in the bid proposal are approximate and are to be used only (a) as a basis for estimating the probable cost of the work and (b) for the purpose of comparing the bids submitted for the work. The actual amounts of the work done, and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done, and materials furnished at the unit price bid. If actual quantities exceed or are less than estimated quantities Contractor will not be eligible for a price adjustment or additional time. The Contractor is responsible for obtaining a copy of the current Utility Specifications and becoming familiar with them.

1.4.13 Supplemental Technical Specifications

The Supplemental Technical Specifications included in this Invitation for Bids shall supersede any and all provisions in the Standard Specifications related to utility work. All estimated utilities quantities for unit price items stipulated in the bid schedule are approximate and are to be used only (a) as a basis for estimating the probable cost of the work and (b) for the purpose of comparing the bids submitted for the work. The actual amounts of the work done, and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished at the unit price bid.

1.4.14 Abandoned Utilities

Los Alamos has utilities and structures that have been abandoned in place. These abandoned utilities are not owned or operated by the previous owner of the utilities. They cannot be located and do not appear on the Plans. The Contractor upon uncovering an abandoned utility that may conflict with construction and or utility installation must request verification that the utility is in actual fact abandoned. If the line or conduit is verified as abandoned, the Contractor has the choice of working around it or cutting, removing and capping its ends. No additional payment or time will be granted for the removal of abandoned utilities or working around abandoned utilities. Some of the abandoned utilities could be transite asbestos pipe or conduit. If removal of the transite material is required no additional payment or time will be granted for the proper removal and disposal per the appropriate local, state, and federal regulations.

1.4.15 Coordination with County Gas, Water, Sewer (GWS) & Electric Operations

Contractor shall coordinate with County Utility Operations, prior to initiating any work associated with the pipelines, conduits, electric distribution lines and other appurtenant utility items. All costs associated with the Contractor's coordination efforts shall be incidental to the project's cost. Utility service interruptions shall only occur upon the

Contractor receiving approval of their service interruption plan by the Project Manager. Plan shall be submitted for approval no less than 48 hours in advance of the proposed interruption. Contractor shall not make any connections to existing facilities, until a Penetration Permit has been issued by the County. Furthermore, no roadway work should be initiated until all utility work under that roadway has been completed.

1.4.16 Time of the Essence

Time is of the essence with respect to all provisions of this Agreement that specify a time for performance; provided; however, that the foregoing shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Agreement.

1.4.17 Coordination with Century Link / LUMEN

Coordination with CenturyLink/Lumen will be required. The County is providing a new roadway and infrastructure with this project. The Contractor may need to provide access to CenturyLink/Lumen or its agents to install the new facilities at the proper depth. Scheduling and coordination will be the responsibility of the Contractor, so it does not interfere with other operations on the Project. No additional payment or time will be granted for this additional coordination.

1.4.18 Coordination with Comcast Cable

Coordination with Comcast Cable will be required. The County is providing a new roadway an infrastructure with this project. The Contractor may need to provide access to Comcast or its agents to install the new facilities at the proper depth. Scheduling and coordination will be the responsibility of the Contractor, so it does not interfere with other operations on the Project. No additional payment or time will be granted for this additional coordination.

1.4.19 Trenching and Backfill

The trenching, bedding and backfill for utilities pipes, storm drainpipes, and appurtenances in soil or rip able tuff are incidental to the unit cost for the pipe and associated appurtenances, conduit, vault, or splice box and not compensated separately. Actual width and depth of trench will be used to calculate excavation quantities of hard rock. Additional excavation for trench sloping and/or trench boxes and shoring are considered incidental. No additional payment or time will be granted for this additional incidental excavation. Trenching quantities of hard rock for utilities will be calculated using the outside dimensions of the utilities plus 12 inches. Additional excavation for trench sloping and/or trench boxes and shoring are considered incidental. No additional payment or time will be granted for this additional incidental excavation and backfill. The contractor is encouraged to use trench shoring or trench boxes to reduce excavation and disturbance area.

1.4.20 Potholing

All utilities and storm drains crossed, in proximity to each other, and at tie-in locations shall be potholed by the Contractor. The pothole shall have a diameter of at least 12 inches. If the initial pothole of a located utility does not result in the discovery of the utility line, the pothole shall be expanded 18 inches in all directions. If the expanded pothole does not discover the utility line, the utility owner shall be contacted to have the utility owner relocate the utility line. If upon relocation the utility line cannot be discovered by potholing it is the responsibility of the utility owner to pothole and physically locate the utility line. The depth and location of each potholed utility shall be recorded by the Contractor and referenced

against excavation for roadbed, curb, and sidewalk to determine if utility line conflicts with roadway construction. All potential conflicts shall be reported in a timely manner to the County Project Manager. Potholing is considered incidental to the installation work and is not compensated separately.

1.4.21 Utilities Submittals

Submittals should be sent to the Project Manager as soon after the Notice of Award as possible. All Utilities Submittals shall be sent to the Project Manager within 30 days of the Notice of Award so that timely delivery of materials does not delay the Project.

1.4.22 Permits, CPM Schedule, and Roadway Material Submittals

Permits, CPM Schedule, and roadway materials submittals having significant lead time for delivery shall be received by the Project Manager **within 30 days** following the Notice of Award issued to the Contractor.

The Contractor is responsible for determining which materials require significant lead time that would affect the critical path of the project schedule.

Traffic Permit for Road Closures and Traffic Impedance and an Excavation Permit is required for this project.

Also, if more than one acre of soil disturbance occurs, the Contractor is required to submit the Notice of Intent (NOI) as an “Operator” of the SWPPP. The Contractor is required to submit the NOI on-line at the site identified in the 2019 Edition of the New Mexico Department of Transportation (“NMDOT”) Standard Specifications for Highway and Bridge Construction Section 603-Temporary Erosion and Sediment Control, Exhibit A, section 1.2.1.4 once the SWPPP template has been modified to meet the needs of the work and once it has been approved by the County Project Manager. Note that as of February 16, 2012 the NOI form has been reformatted with a new date but maintaining the previous assigned Permit number. Permit number NMR100000 is assigned to the Area of Coverage (where EPA is the Permitting Authority) for the State of New Mexico, except Indian Country.

The Contractor shall complete these permits and notice prior to construction. The Contractor is notified that there is a mandatory 14-day acknowledgment/waiting period for the NOI to take effect before ground disturbance activities occur. Therefore, the timely submittal of the SWPPP after Notice of Award is critical to the start of construction. The County is not responsible, nor will it not adjust the contract time for the late deliverable of these submittals and those identified in the contract document.

The County will not allow additional contract time as a result of late delivery of materials to the project site as well as additional time to approve re-submitted traffic control plans, SWPPP plans, certifications essential to the work to be performed, and CPM schedules that did not meet County requirements.

1.4.23 Geotechnical Investigation Report

Included as Attachment (See section 3.3.3)

1.4.24 Disposal of Excess Material

All excess roadway materials such as clean millings, base course and clean soil generated from the project are the property of the County and shall be hauled to a site within the county, as coordinated by the project manager. All material designated by the project manager as remaining, or excess, shall be disposed of by the contractor in accordance with applicable environmental codes. Removed material may be stored at a temporary storage location as directed by the contract or the project manager. Los Alamos County will allow stockpiling of the material within the designated staging area under the terms of the Staging Area Agreement during the project. Prior to Final Completion the Contractor is to haul off site all remaining excess dirt/soil material to a designated location of their choice. Disposal and hauling of the material out of Los Alamos County is incidental to the work and no additional payment will be made by the County.

1.4.25 Storm Water Control

The Work under this contract will occur in existing drainage ways and roadways with active drainage systems. This Work consists of preparing a Storm Water Pollution Prevention Plan (SWPPP), and constructing, inspecting, and maintaining erosion, sediment control, and storm water pollution prevention facilities for the discharge of storm water associated with construction activity. This Work includes construction phase activities through final stabilization. The Contractor shall at all times be responsible for protecting all materials, and work being performed from damage due to storm water runoff at no additional cost to the County. The Contractor shall maintain the SWPPP in accordance with the NPDES Construction General Permit until final grading, erosion control, and seeding operation completion.

Dewatering operations, required under any circumstance (e.g., including but not limited to flooding resulting from months when recorded rainfall/precipitation is higher than normal/average, and/or flooding resulting from nonfunctional storm drain systems during construction, and/or unprotected open trenches), are incidental to the cost of the work being performed and shall be at no additional cost to the County.

1.4.26 Flowable Fill as an Alternative to Select Backfill

The Contractor may use flowable fill as an alternative to select backfill. In this case NMDOT Section 206.2.2 flowable fill shall apply. Flowable fill, as select backfill material, is included in the contract unit price per linear foot of culvert trench.

1.4.27 Field Offices

The Contractor, at his expense, is responsible for providing his own field office and/or Caretaker unit under the terms of the Staging Agreement. The County will arrange a meeting place or conference room to conduct weekly meetings.

The Contractor may provide a caretaker unit to serve as a field office at no additional cost to the County; Contractor shall provide a locked storage container for (1)-nuclear densometer which will be used by his qualified testing laboratory designee unless other appropriate accommodations are to be provided. If a nuclear densometer is to be stored on site, the local Fire Marshall shall be informed of its location with the appropriate signage.

1.4.28 Security

The Contractor shall provide security for all Contractor's equipment, materials, supplies, offices, temporary utilities, etc. The County is not responsible for theft and/or damage of Contractor's equipment, materials, supplies, offices, vehicles, or work in progress.

1.4.29 Maintenance During Construction

The Contractor shall be responsible of maintenance within the project limits until Final Completion. Work includes but is not limited to sweeping, pothole patching, snow/ice removal for areas not open to the public, providing a suitable concrete washout location, and providing smooth pavement transitions.

Sweeping- A suitable street sweeper shall be required for this project to minimize displacement of dirt and other debris. The sweeper shall have an operational/working water storage tank, shield, and drip system as to minimize dust displacement. If such sweeping equipment is ineffective (i.e., Complaints persist due to poor sweeping operations), the Contractor shall use a sweeper with wet vacuum capabilities at no expense to the County.

The Contractor shall sweep all streets and sidewalks that exhibit mud-tracking that originates from the work zone and/or its staging areas. Failure to maintain a clean workspace that contributes to storm water pollution can result in penalties in the form of liquidated damages as identified in Section 603 of the 2019 NMDOT Standard Specifications.

1.4.30 Security

The Contractor shall provide security for all Contractor's equipment, materials, supplies, offices, temporary utilities, etc. The County is not responsible for theft and/or damage of Contractor's equipment, materials, supplies, offices, vehicles, or work in progress.

1.4.31 Preconstruction Walk-Through

Representatives from the Contractor, Owner, and Engineer shall perform a walk-through inspection at a minimum of seven (7) calendar days prior to construction of the Project. The preconstruction walk-through will be performed to discuss/verify the following activities:

1. Construction Staking
2. Location of existing property survey pins
3. Location of all existing utilities
4. Verify all driveway and curb ramp locations
5. Verify trees/vegetation for pruning, removal and protection
6. Verify location and requirements covered under Archaeological Monitoring Plan
7. Review traffic control plan and procedures
8. Walk entire Project Limits
9. SWPPP procedures and BMP placements
10. Staging area locations and usage

11. Identify pedestrian detour routes and respective maintenance procedures
12. Update Cone Zone report (local newspaper traffic notice)

Prior to the walk-through, the Contractor shall perform ample construction staking for an effective coordination of construction, including the locations of all existing utilities. The Contractor shall budget a minimum of eight (8) hours for the preconstruction walk-through. The preconstruction walk-through will be considered incidental to the completion of the work and no separate measurement or direct payment will be made, therefore.

1.4.32 Cast Iron Truncated Domes – ADA Detectable Warning Surfaces

Contractor shall be responsible for providing all cast iron detectable warning surfaces on the project. The ADA curb ramps that callout for the ADA curb ramps with detectable warning surfaces shall be constructed with an area shown in the plan sheets for the detectable devices. The detectable devices at the crosswalks shall be in compliance with all NMDOT and federal regulations. Cast iron truncated domes are incidental to the Concrete Sidewalk 4", Item No. 608004.

1.4.33 Traffic Control Supervisor

This Work consists of providing traffic control management in accordance with the Contract, the *MUTCD "current edition"*, and Section 618 - Traffic Control Management, of the 2019 Edition of the NMDOT Standard and Specifications book for Highway construction, including supervision of personnel and installation, inspection, maintenance and field adjustment of traffic control devices on the Project.

1.4.34 Special Project Accommodations

The Contractor shall make special accommodations for delivery trucks to adjacent residences.

The project area may have residents that require medical assistance, so the Contractor is to maintain access to businesses and access for emergency vehicles at all times. The Project Manager will notify the Contractor at the preconstruction meeting or during construction of this need.

The Contractor shall assist in making roll-off carts accessible for curb side service and dumpster pick up accessible from their storage locations once a week when County solid waste and recycle services run the pickup route. The Contractor and Project Manager shall coordinate these activities with Environmental Services Department.

The Contractor shall allow for pedestrian and parking access during construction to local businesses and residences.

1.4.35 Pre-paving and Permanent Signing & Striping Placement Meetings

The Contractor is required to coordinate a pre-paving, striping, and a permanent signing placement (if applicable to the project) meeting prior to the respective work beginning to allow for discussion of contract requirements and quality control requirements.

The purposes of such meetings are to include but is not limited to the following:

Pre-paving - Verify the mix designs being used, paving schedules, paving operations QC plan provided by the Contractor, identify shake-down period, lot size determination, joint placement locations with respect to striping placement, discuss Asphalt Price Adjustment/Composite Pay Factor determination procedures applied to the lots determined, hauling restrictions, and weather & field condition limitations.

Striping - Verify all striping is per plans and per Los Alamos County Traffic & Streets Division specifications. Prior to the layout of the striping, the pre-striping meeting will be conducted so if any field adjustments are necessary or anticipated the changes can be made ahead of the operation. This will include pavement striping, curb paint, and traffic symbol placement.

Permanent Signing Placement - Ensure that One-call verification prior to sign placement is done. It is anticipated that minor field adjustments will occur during permanent signing placement operations as determined by Los Alamos County Traffic Division.

Note all operations shall have an approved traffic control plan which requires lead time as determined by the Los Alamos County Traffic & Streets Division. All operations shall be included into the 2-week schedule to allow for notification to the public and/or provide notice on traffic message boards of the upcoming operations.

1.4.36 Rock Excavation (Including Reinforced Concrete)

The Contractor should be aware that rock excavation, including sub-surface reinforced concrete, could be encountered during roadway construction activities and or storm drainage system trenching operations. In such cases, bid item 203301 Rock excavation will be utilized for measurement and payment in accordance with Section 203.2.1.1 per NMDOT Specifications, based on cubic yard of material removed.

1.5 Bid Forms

This Bid Submitted to:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
Bathtub Row Reconstruction Project**

- A. The undersigned Bidder proposes and agrees, if this Bid is accepted; to enter into an agreement with County in the form included in the solicitation documents; to perform and furnish all work as specified or indicated in the solicitation documents for the contract price; and within the contract time indicated in this bid; and in accordance with all of the other terms and conditions of the solicitation documents.
- B. Bidder accepts all the terms and conditions of the solicitation and Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for sixty (60) calendar days after the day of the Bid opening. Bidder will sign and submit the Agreement and the Performance, Labor and Material Bonds, Certificate of Insurance

- and all other documents required by the Solicitation Requirements within ten (10) calendar days after receipt of the County's Notice of Award.
- C. Notice to Proceed shall be issued no later than twenty-eight (28) calendar days from Notice of Award.
 - D. Bidder shall promptly provide written notice to the County of any conflicts, errors, or discrepancies discovered in the solicitation documents.
 - E. Bidder represents this Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding, and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over County.
 - F. By submitting the bid, each bidder represents to the County that it has inspected the site, is familiar with local conditions that may affect cost, progress, performance or furnishing of the work, has considered federal, state, and local laws and regulations that may affect cost, progress, performance, or furnishing of the Work and has read and is thoroughly familiar with the technical specifications and plans and the Solicitation and Contract document (including all addenda). The failure or omission of any such bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to its bid.
 - G. Bidder represents that a complete set of Solicitation Documents was used in preparing the Bid and acknowledges that the County assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Solicitation Documents.
 - H. Bidder represents that the submission of this bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bid, that without exception the Bid premised upon performing and furnishing the Work required by the Solicitation Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Solicitation Documents, and that the Solicitation Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
 - I. The Solicitation Documents are intended to describe a functionally complete project to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically required. When words or phrases which have a well-known technical or construction industry or trade meanings are used to describe work, materials or equipment, such words or phrases shall be interpreted in accordance with those meanings. Clarifications and interpretations of the Technical Specifications and Contract Drawings shall be issued by the County.
 - J. The quantities appearing in the Bid Schedule, Plans, or other contract documents are approximate only and are prepared for the comparison of bids. Payment to the

Contractor will be made only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of Work performed and accepted, or materials furnished in accordance with the contract.

- K. The County reserves the right to obtain a cost breakdown of specific Unit Bid items having lump sum (LS) units of measure during the review process.

1.5.1 Bid Form

Bidder agrees to perform the work for the following prices:

The TOTAL amounts of the below bid (excluding NMGRT) shall be shown in both words and figures. In case of discrepancies, the amount shown in words will govern.

UNITS ACRONYMS		
ACRE = Acre	EACH = EACH	L.S. = Lump Sum
ALOW = Allowance	LB = Pound	SQ.YD. = Square Yard
CU.YD. = Cubic Yard	LIN.FT. = Linear Feet	TON = Ton

BASE BID: BATHTUB ROW RECONSTRUCTION PROJECT

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
201000	CLEARING AND GRUBBING	L.S.	1		
203000	UNCLASSIFIED EXCAVATION	CU.YD.	1280		
203100	BORROW	CU.YD.	140		
203211	UNSTABLE SUBGRADE STABILIZATION	SQ.YD.	2650		
207000	SUBGRADE PREPARATION	SQ.YD.	7640		
303160	BASE COURSE 6"	SQ.YD.	7640		
407000	ASPHALT MATERIAL FOR TACK COAT	TON	3		
408100	PRIME COAT MATERIAL	TON	15		
417000	MISCELLANEOUS PAVING	SQ.YD.	470		
423270	HMA (SP-IV) COMPLETE	SQ.YD.	7610		

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1		
601110	REMOVAL OF SURFACING	SQ.YD.	7640		
603262	COMPOSTED MULCH SOCK	LIN.FT.	105		
603281	SWPPP PREPARATION AND MAINTANCE	L.S.	1		
608004	CONCRETE SIDEWALK 4"	SQ.YD.	840		
608009	ADA CURB RAMP	SQ.YD.	480		
608106	DRIVE PAD 6"	SQ.YD.	60		
608110	CONCRETE FILLET	SQ.YD.	150		
609200	12" HEADER CURB	LIN.FT.	110		
609424	CONCRETE VERTICAL CURB & GUTTER 6"x 24"	LIN.FT.	2460		
609636	CONCRETE VALLEY GUTTER 6"x 36"	LIN.FT.	40		
609651	CONCRETE VALLEY GUTTER 6" x 84"	LIN.FT.	40		
609652	CONCRETE VALLEY GUTTER 6" x 96"	LIN.FT.	30		
609706	CONCRETE LAYDOWN CURB 6"	LIN.FT.	810		
613000	CLEANING OF CULVERTS AND DRAININAGE STRUCTURES	L.S.	1		
617000	VIBRATION MONITORING	L.S.	1		

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
617003	VIDEO RECORDING	L.S.	1		
618000	TRAFFIC CONTROL MANAGEMENT	L.S.	1		
621000	MOBILIZATION	L.S.	1		
663855	ADJUST VALVE BOX TO GRADE	EACH	1		
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	L.S.	1		
707810	REMOVE & RESET LIGHTING STANDARD & LUMINAIRE	EACH	2		
709020	RIGID ELECTRICAL CONDUIT 2" (DIA.)	LIN.FT.	340		
710000	ELECTRICAL PULL BOX (STANDARD)	EACH	8		
711110	SINGLE CONDUCTOR 10	LIN.FT.	1060		
801000	CONSTRUCTION STAKING BY CONTRACTOR	L.S.	1		
802000	POST CONSTRUCTION PLANS	L.S.	1		
901000	CONTRACTOR PROCESS QUALITY CONTROL	L.S.	1		

ROADWAY BASE BID TOTAL –	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance, and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

UTILITIES BASE BID: BATHTUB ROW RECONSTRUCTION PROJECT

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
1	14" DUCTILE IRON WATER PIPE BY TRENCHING	LIN.FT	100	\$ -	\$ -
2	14" DUCTILE IRON WATER PIPE BY TRENCHING 6' TO 9'	LIN.FT	1281	\$ -	\$ -
3	OWNER FURNISHED 14" DUCTILE IRON WATER PIPE BY TRENCHING	LIN.FT	50	\$ -	\$ -
4	OWNER FURNISHED 14" DUCTILE IRON WATER PIPE BY TRENCHING 6' TO 9'	LIN.FT	399	\$ -	\$ -
5	12" C900 WATER PIPE BY TRENCHING	LIN.FT	1270	\$ -	\$ -
6	8" C900 WATER PIPE BY TRENCHING	LIN.FT	1900	\$ -	\$ -
7	6" C900 WATER PIPE BY TRENCHING	LIN.FT	115	\$ -	\$ -
8	6" DUCTILE IRON WATER PIPE BY TRENCHING(FIRE HYDRANT LEGS)	LIN.FT	270	\$ -	\$ -
9	14" DUCTILE IRON GATE VALVE WITH BOX	EACH	1	\$ -	\$ -
10	12" DUCTILE IRON GATE VALVE WITH BOX	EACH	7	\$ -	\$ -

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
11	8" DUCTILE IRON GATE VALVE WITH BOX	EACH	10	\$ -	\$ -
12	6" DUCTILE IRON GATE VALVE WITH BOX	EACH	2	\$ -	\$ -
13	CONNECTION TO 14" EXISTING WATER LINE	EACH	3	\$ -	\$ -
14	CONNECTION TO 12" EXISTING WATER LINE	EACH	2	\$ -	\$ -
15	CONNECTION TO 8" EXISTING WATER LINE	EACH	6	\$ -	\$ -
16	CONNECTION TO 6" EXISTING WATER LINE	EACH	3	\$ -	\$ -
17	INSTALL NEW FIRE HYDRANT ASSEMBLY W/VALVE AND BOX	EACH	9	\$ -	\$ -
18	NEW SINGLE PEX 2" WATER SERVICE/ WITH BOX	EACH	1	\$ -	\$ -
19	NEW SINGLE PEX 2" WATER SERVICE	EACH	4	\$ -	\$ -
20	NEW SINGLE PEX 1" WATER SERVICE/ WITH BOX	EACH	5	\$ -	\$ -
21	NEW SINGLE PEX 1" WATER SERVICE	EACH	7	\$ -	\$ -
22	1" AND 2" ARV AND MANHOLE	EACH	3	\$ -	\$ -
23	RETIRE REPLACED WATER LINE	L.S.	1	\$ -	\$ -
24	HDPE 8" SEWER LINE	LIN. FT	280	\$ -	\$ -
25	4" SCH-40 PVC SEWER DELIVERY LINE	EACH	3	\$ -	\$ -
26	4' SEWER MANHOLES	EACH	3	\$ -	\$ -

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
27	TIE IN TO EXISTING MANHOLE	EACH	1	\$ -	\$ -
28	RETIRE EXIST SEWER	EACH	1	\$ -	\$ -
29	4" ASPHALT CUT & REPAIR (TACK COAT INCLUDED)	SQ.YD	1000	\$ -	\$ -
30	ROCK EXCAVATION	SQ.YD	100	\$ -	\$ -
31	CONCRETE VALLEY GUTTER REPLACEMENT	SQ.YD	15		
32	CONCRETE FILLET AND LAYDOWN CURB REPLACEMENTS	SQ.YD	55		

UTILITIES BASE BID TOTAL –	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

ROADWAY AND UTILITIES BASE BID TOTAL –	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

1.5.2 Alternates and Allowances

Bid Alternate Items
<p><i>Note to Bidders: Bid Alternate Items are intended to stand alone and are therefore separate from the Base Bid Items. Each Bid Alternate is a standalone price, excluding NMGRT. As such, the Bidder shall include all applicable Insurance and Bonds Costs in each Bid Alternate Item.</i></p> <p><i>Depending on Total Base Bid amount and County’s budget, a determination, at County’s sole discretion, will be made if the bid alternates will be awarded in their entirety, individually or none at all.</i></p>

BID ALTERNATE – 1 PARKING LOTS (BATHTUB ROW RECONSTRUCTION PROJECT)

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
203000	UNCLASSIFIED EXCAVATION	CU.YD.	130		
203211	UNSTABLE SUBGRADE STABILIZATION	SQ.YD.	380		
207000	SUBGRADE PREPARATION	SQ.YD.	1140		
303140	BASE COURSE 4"	SQ.YD.	1140		
407000	ASPHALT MATERIAL FOR TACK COAT	TON	1		
408100	PRIME COAT MATERIAL	TON	1		
423270	HMA (SP-IV) COMPLETE	SQ.YD.	1140		
601110	REMOVAL OF SURFACING	SQ.YD.	1140		

BID ALTERNATE – 1	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

BID ALTERNATE – 2 LITTLE THEATRE (BATHTUB ROW RECONSTRUCTION PROJECT)

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
601000	REMOVAL OF STRUCTURES AND OBSTRUCTION	L.S.	1		
607079	PEDESTRIAN/BICYCLE RAILING	LIN.FT.	30		
608004	CONCRETE SIDEWALK 4"	SQ.YD.	340		
608009	ADA CURB RAMP	SQ.YD.	20		
609424	CONCRETE VERTICAL CURB AND GUTTER. 6" x 24"	LIN.FT	100		
609706	CONCRETE LAYDOWN CURB 6"	LIN.FT.	30		

BID ALTERNATE – 2	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

BID ALTERNATE – 3 BROADBAND (BATHTUB ROW RECONSTRUCTION PROJECT)

ITEM NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT BID PRICE IN DOLLARS AND CENTS	AMOUNT BID TOTAL IN DOLLARS AND CENTS
709040	RIGID ELECTRICAL CONDUIT 4" (DIA.)	LIN.FT.	2290		
710015	OPEN BOTTOM POLYMER CONCRETE VAULT	EACH	6		

BID ALTERNATE – 3	\$
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Total Bid Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

TOTAL BID ALTERNATES-1, 2, and 3	\$
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Total Roadway Bid Alternate 1, 2, and 3 Amount written in words:

_____ **Dollars**

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

This bid is hereby submitted by the undersigned, in full conformity with the solicitation documents, and warrant that the undersigned. Has the authority to bind the General Contractor for the work

I the undersigned have reviewed the Summary of Work and certify that the following licenses are required to fully perform the Summary of Work and that I as the General Contractor and/or Sub-contractors to be employed under this contract possess such New Mexico Contractor’s License Number(s) and Classification(s):

Contractor	License Number(s)	Classification(s)

Signature of Agent authorized to sign on behalf of Bidder

Printed Name & Title of Agent

Organization’s Legal Name

Mailing Address

Physical Address

City, State, Zip Code

Telephone Number

Fax Number

Federal Tax I.D Number

NM CRS # (if located in-state)

N.M. Preference Certification (attach copy)

Los Alamos County Business License Number: (Required to perform work in the County)

NOTE: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance, and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under the contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

NON-DISCRIMINATION POLICY: This Company does not discriminate on the basis of color, national origin, sex, religion, age, and disabled status in employment or the provision of services.

1.5.3 List of Subcontractors

All Bidders shall comply with the Subcontractor’s Fair Practices Act Chapter 13-4-31 to 13-4-43 NMSA 1978, Laws of New Mexico

Pursuant to Section 13-4-34, based on the Architect/Engineer estimate, list all subcontractors including second and third tiers performing work in excess of \$ 5,000.00.

No modifications to the list of subcontractors can be made at any time during the performance of the Work contemplated by the Agreement without the prior written approval of the County.

Contractor & Contact Name:	License # Classification:	E-mail:	Address:	Work to be Performed:

1.5.4 Bid Bond



LOS ALAMOS

As Principal, hereinafter called the Principal or Contractor, and _____, a corporation duly organized and existing under and by virtue of the laws of the State of _____ and authorized to do business in the State of New Mexico, as Surety hereinafter called the Surety, are held and firmly bound unto the County of Los Alamos, New Mexico, as Obligee, hereinafter called the County, in the sum of five percent of the Bid, _____ dollars - \$ _____ for the payment of which sum Principal and Surety bind themselves, their heirs, executors, and administrators, successors, and assigns, jointly and severally. The conditions of this Bond are such that whereas the Principal has submitted the accompanying Bid for:

**Incorporated County of Los Alamos
 Bid Number: IFB24-74
 Bathtub Row Reconstruction Project**

which Bid is by reference made a part hereof and is hereinafter referred to as the Bid and, if the County shall accept the Bid of the Principal and the Principal shall enter into a Contract with the County in accordance with the terms of such a Bid, and give such bond or bonds as may be specified in the bidding or solicitation documents with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, and shall in all other respects perform the agreement created by the acceptance of said Bid, or in the event of the failure of the Principal to enter into such contract and give such bond and bonds, if the Principal shall pay the County the difference between the amount specified in said bid and such larger amount which the County may in good faith

Bid Bond continued

contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall be in no way Impaired or affected by any extension of the time within which the County may accept such Bid; and said Surety does hereby waive notice of any such extension.

SIGNED AND ATTEST this _____ day of _____, 2024.

PRINCIPAL:

By: _____

Print Name: _____

Title: _____

ATTEST: _____

SURETY:

By: _____

Print Name: _____

Title: _____

ATTEST: _____

1.5.5 Campaign Contribution Form

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

****This document must be returned with IFB submittal.****

Pursuant to Chapter 81, Laws of 2006, any prospective contractor seeking to enter into a contract with any state agency or local public body must file this form with that state agency or local public body. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two (2) years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two (2) years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds TWO HUNDRED FIFTY DOLLARS (\$250.00) over the two (2) year period.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

“Applicable public official” means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

“Campaign Contribution” means a gift, subscription, loan, advance or deposit of money or other things of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official’s behalf for the purpose of electing the official to either statewide or local office. “Campaign Contribution” includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

“Contract” means any agreement for the procurement of items of tangible personal property, services, professional services, or construction.

“Family member” means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law.

“Pendency of the procurement process” means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

“**Person**” means any corporation, partnership, individual, joint venture, association or any other private legal entity.

“**Prospective contractor**” means a person who is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person qualifies for a sole source or a small purchase contract.

“**Representative of a prospective contractor**” means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

DISCLOSURE OF CONTRIBUTIONS: (Report any applicable contributions made to the following - COUNTY COUNCILORS: Denise Derkacs; Melanee Hand; Suzie Havemann; Keith Lepsch, David Reagor; Randal Ryti; and Theresa Cull.)

Contribution Made by: _____

Relation to Prospective Contractor: _____

Name of Applicable Public Official: _____

Date Contribution(s) Made: _____

Amount(s) of Contribution(s) _____

Nature of Contribution(s) _____

Purpose of Contribution(s) _____

Signature Date

Title (position)

—OR—

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS (\$250.00) WERE MADE to an applicable public official by me, a family member or representative.

Signature Date

Title (position)

1.5.6 Certification - Debarment, Suspension, and other Responsibility Matters

**Incorporated County of Los Alamos
Invitation for Bids Number IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

The Bidder certifies to the best of its knowledge and belief that it, its principals and its sub-contractors:

- A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, Local Entity;
- B. Have not within a three (3) year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction. Violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property
- C. Are not presently indicted for otherwise criminally or civilly charged by a Federal, State, or Local Entity with commission of any of the offenses enumerated in paragraph (1) (B) of this certification; and
- D. Have not within a three (3) year period preceding this application/bid had one or more public transactions (Federal, State, or Local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this bid or termination of the award.

In addition, under 18 U.S.C. Sec. 10 01, a false statement may result in a fine up to \$ 10,000 or imprisonment for up to five (5) years, or both if Federal funding is used.

Typed Name & Title of Authorized Representative

Signature of Bidder’s Authorized Representative Date

Comments:

Date: _____

Contractor: _____

Address: _____

City, State, Zip Code: _____

_____ confirms that all proposed subcontractors are not currently

Contractor

suspended or debarred from conducting business with any City, State, County, or Federal Government entities.

Name and Title of Authorized Representative Date

--- OR ---

I am unable to certify the above for the following reasons:

1.5.7 Permanent Main Office Address of Company

Organization’s Legal Name Founding Date

Physical Address

Mailing Address

City, State, Zip Code

If incorporated, attach a Certificate of Good Standing from the Public Regulation Commission.

1.5.8 Authorization for Verification of Information

_____ hereby authorizes any person, firm, or corporation to furnish Contractor any information requested by Los Alamos County or designated representative, to verify any and all information submitted with or relevant to this bid.

Printed Name and Title of Authorized Representative

Signature Date

Sec. 31-261. - State and local preferences.

- (a) *Definitions.* For the purposes of this section:
 - (1) The terms "resident business" and "resident veteran business" shall be defined as set out in NMSA 1978, § 13-1-21;
 - (2) The term "local" as applied to a business shall mean that it meets the requirements of the above definition, maintains its principal office and place of business in Los Alamos County, and has a required Los Alamos County business license.
- (b) *Requirements for preference qualification.* The chief purchasing officer shall determine if a preference is applicable to a particular bid or offer on a case-by-case basis. A bidder or offeror must submit a written request for preference, with a copy of the state-issued preference certificate, with its bid or proposal to qualify for this preference.
 - (1) If a corporation, it shall be incorporated in New Mexico and maintain its principal office and place of business in the state;
 - (2) A person shall have qualified with the state chief purchasing officer as a resident business or resident veteran business and obtained a certification number as provided in NMSA 1978, § 13-1-22.
- (c) *Preference factor.*
 - (1) The preference factor for qualifying resident and local businesses applied to bids and proposals shall be five percent.
 - (2) The preference factor for qualifying resident veteran businesses shall be in accordance with the requirements set forth in NMSA 1978, § 13-1-21.
- (d) *Invitations for bids.* When bids are received, the price quoted by the qualifying vendor shall be multiplied by 0.95. After application of the preference factor, the contract shall be awarded to the lowest bidder. If one or more low prices are equal, the bid shall be awarded with respect to the next category of offerors listed below, and the next, until an offer qualifies for award. The priority of categories of offers is as follows:
 - (1) Local business;
 - (2) Resident business.
- (e) *Requests for proposals.* When proposals are received, the total evaluation score with or without the cost factor of each proposal received from a qualifying vendor shall be multiplied by 1.05. After application of the factor, the contract shall be awarded to the highest score. If one or more scores are equal, the same procedure shall be followed with respect to the next category of offerors listed, and the next, until an offer qualifies for award. The priority of categories of offerors is the same as listed in subsection (d) of this section.

- (f) *Exemptions from preferences.* The resident and local preference specified in this article shall not be applied:
- (1) To requests for qualifications;
 - (2) To any purchase of goods or services in excess of \$500,000.00;
 - (3) When the expenditure of federal funds designated in whole or in part for a specific purchase is involved; or
 - (4) When the expenditure of grant funds, a condition of which prohibits a local preference, is involved.

(Ord. No. 02-098, § 2, 12-2-2008; Ord. No. 02-305, § 8, 2-25-2020)

<p>Are you requesting Preference?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>By answering “yes,” the bidder or offeror is submitting a written request for preference.</p> <p>A Bidder or Offeror must submit a copy of the state-issued preference certificate with its bid or proposal to qualify for this preference.</p>
--

1.5.9 Certificate of Contractors Registration

Sample *Certificate of Contractor Registration*



This is to certify that

XYZ Company, Inc.

1234 Main Street

ALBUQUERQUE, NM, 87109-5564

has registered with the Department of Workforce Solutions

Registration Date: 01/01/2017

Registration Number: 123456789

**This certificate does not show the current status of the company.
To see the current status for this company please go to the Public Works
and Apprenticeship Application (PWAA) at
<https://www.dws.state.nm.us/pwaa>**

2.0 AWARD PHASE

2.1 Award Forms

2.1.1 Notice of Award



LOS ALAMOS

NOTICE OF AWARD AND IDENTIFICATION OF COUNTY’S DESIGNEE

To: _____

Address: _____

Project Description:

**Incorporated County of Los Alamos
Invitation for Bids Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

Notice of Award:

The County has considered the Bid submitted by you for the above described Project in response to its Invitation for Bids dated May 30, 2024.

You are hereby notified that your Bid has been accepted subject to your executing the Agreement and furnishing the required Contractor’s Performance Bond, Labor and Materials Payment Bond and required Certificates of Insurance, within ten (10) calendar days from the date of receipt of the Notice of Award.

You are hereby notified that the schedule required per Section 3, Schedules, Reports, and Records will be required to be submitted and accepted prior to Notice to Proceed being issued.

The following documents are provided with the Notice of Award: Two (2) copies of the Agreement, Performance Bond and Labor and Materials Payment Bond.

Notice of Award continued

If you fail to sign and return to County’s Designee said Agreement, and to furnish said Bonds within ten (10) days from the receipt of this notice, the County will be entitled to consider all your rights arising out of the County’s acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The County will be entitled to such other rights as may be granted by law.

County’s Designee:

The Incorporated County of Los Alamos (County) designates _____ as the County’s Designee in connection with the performance of the work contemplated in the Contract, dated _____, between the County and _____ (Contractor).

Dated this _____ day of _____ 2024.

Incorporated County of Los Alamos

Anne W. Laurent
County Manager

2.1.2 Receipt of Notice of Award



LOS ALAMOS

Receipt of the above Notice of Award is hereby acknowledged by:

_____, this _____ day of _____, 2024, for

the following project:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

CONTRACTOR:

By: _____

Printed Name: _____

Title: _____

2.1.3 Performance Bond



LOS ALAMOS

Bond No. _____

We as Principal, hereinafter referred to as Contractor, and _____ a corporation organized and existing under and by the virtue of the laws of the State of _____ and authorized to do business in the State of New Mexico, hereinafter called Surety, are held and firmly bound unto the Incorporated County of Los Alamos, hereinafter referred to as County, in the penal sum of one hundred percent (100%) of the Contract Price of _____ dollars (\$ _____), as may be adjusted by Change Order, inclusive of applicable gross receipts taxes in lawful money of the United States of America, for the payment of which sum Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITIONS OF THIS BOND are such that, whereas, Contractor has been awarded and has agreed to enter into a certain Contract with the Incorporated County of Los Alamos, to which this Performance Bond will be attached and incorporated therein, for performance of Work or services on Project specifically described in the Contract document for:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

and if Contractor shall perform and complete all of the undertakings, covenants, terms, and obligations of said Contract during the original term thereof, and any extensions which may be granted by the County with or without notice to the Surety, and if Contract shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the County from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the County all outlay and expenses which the County may incur in making good any default, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

Performance Bond Continued

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due, except that, with respect to express guarantees of a longer term, a suit thereon must be initiated within six (6) months following the expiration of said express guarantees, if any.

The Surety acknowledges that said Contract may contain express guarantees and agrees that said guarantees, if any, are covered by the Surety’s obligation hereunder.

Right of action with respect to any express guarantees, if any, in said Contract shall accrue following completion and formal acceptance of the work under said contract.

The right to sue on this bond accrues only to the contracting agency and the parties to whom New Mexico Statutes Annotated, 1978 Comp. 13-4-18 through 13-4-20, as amended, grant such right; and such right shall be exercised only in accordance with the provisions and limitation of said statutes.

PROVIDED, FURTHER, that Surety, for value received hereby stipulates and agrees that no change, extensions of time, alteration or addition to the terms of Contract. The Agreement, or the work to be performed thereunder, or the Contract Documents accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alternation or addition to the terms of the Contract.

PROVIDED, FURTHER, that no final settlement between the County and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument may be executed in two counter-parts, each one of which shall be deemed as an original, this _____ day of _____, 2024.

The undersigned state that they have the authority to enter into said Contract.

CONTRACTOR AS PRINCIPAL:

By: _____

Print Name: _____

Title: _____

ATTEST: _____

SURETY:

By: _____

Print Name: _____

Title: _____

ATTEST: _____

2.1.4 Payment (Labor and Materials) Bond



LOS ALAMOS

Payment (Labor and Materials) Bond for the Protection of all Persons Supplying Labor and Material to the Contractor or its Sub-contractors

Bond No. _____

We _____ as Principal, hereinafter called the Contractor, and _____, a Corporation organized and existing under and by virtue of the laws of the State of _____, and authorized to do business in the State of New Mexico, hereinafter called the Surety, are held and firmly bound unto the Incorporated County of Los Alamos as Obligee, hereinafter the County, in the amount of _____ Dollars (\$_____), in the penal sum of one hundred percent (100%) of the Contract Price of _____ dollars (\$_____), as may be adjusted by Change Order, inclusive of applicable gross receipts taxes in lawful money of the United States of America, for the payment of which sum Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

Payment (Labor and Materials) Bond is for the Protection of all Persons Supplying Labor and Material to the Contractor or its Sub-contractors

WHEREAS, Contractor has agreed to enter into the Contract described as follows:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

Which contract is by reference made part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that if the Contractor shall pay as they become due, all just claims for labor performed and materials and supplies furnished upon or for the work under said contract, whether said labor be performed and materials and supplies be furnished under the original contract or any contract thereunder, then this obligation shall be null and void; otherwise, it shall remain in full force and effect, subject, however to the following conditions:

The right to sue on this bond accrues only to the Contracting Agency and the parties to whom Section 31-173 Los Alamos County Code of Ordinances grant such right; and any such right shall be exercised only in accordance with the provisions and limitations of said ordinance.

PROVIDE, FURTHER, that the Surety, for value received hereby stipulates and agrees that no change, extensions of time, alteration, or addition to the terms of the Contract, or to the Work to be performed thereunder, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract.

PROVIDE, FURTHER, the County shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have no obligations to make payments to give notices on behalf of or otherwise have obligations to Claimants. The Surety hereby waives notice of any change, including changes of time, to the Contractor or to related subcontracts, purchase orders and other obligations.

SIGNED AND SEALED ON this _____ day of _____, 2024

CONTRACTOR AS PRINCIPAL:

Signature: _____
Print Name: _____
Title: _____
Address: _____

SURETY’S AUTHORIZED NEW MEXICO AGENT:

Signature: _____
Print Name: _____
Title: _____
Address: _____

This bond is issued simultaneously with Performance Bond in favor of County for the faithful performance of the contract.

2.1.5 Insurance Requirement



LOS ALAMOS

- A. Contractor shall purchase and maintain such liability and other insurance including completed operations insurance for the Work being performed and furnished and will provide protection from claims set forth which may arise out of or result from Contractor's performance and furnishing of the Work being performed and furnished and will provide protection from claims set forth which may arise out of or result from Contractor's performance and furnishing of the Work and Contractor's other obligations under the Solicitation Documents, whether it is to be performed or furnished by Contractor, any Subcontractor or Supplier or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable. Insurance requirements are as follows:
- A.1.1. Comprehensive and General Liability Insurance
 - A.1.2. \$1,000,000 per occurrence and a combined single limit of at least Two Million Dollars (\$2,000,000) aggregate Bodily Injury and Property
 - A.2. Motor Vehicle Insurance
 - A.2.1. Same limits as Comprehensive General Liability Insurance whether for:
 - A.2.1.1. Owned or leased motor vehicles; or non-owned or hired vehicles
 - A.3. Worker's Compensation Insurance
 - A.3.1. The Contractor shall also be required to provide proof of full compliance with New Mexico State Worker's Compensation Laws
 - A.4. Property, Fire, and All Risk Insurance
 - A.4.1. Contractor shall purchase and maintain until final payment, property insurance upon the Work at the site to the full insurable value thereof.
 - A.4.2. This insurance shall insure against the perils of "all risk" insurance for physical loss and damage, and shall include damages, losses, and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys, and other professional). If not covered under the "all risk" insurance, Contractor shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment.
- B. The Contractor, prior to signing the Contract, shall provide proof of insurance coverage, which is satisfactory to the County, in the County's sole discretion, and copies of same to the County

which shall remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing or replacing defective Work.

B.1. Insurance Terms and Conditions

- B.1.1. The following statement shall be included on the certificate of insurance: “The Incorporated County of Los Alamos is named as additional insured regarding General Liability, Automobile Liability, and Professional Liability if required, for

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

- B.1.2. The insurance shall provide that the County will be notified as soon as possible in the event of cancellation.

B.2. Renewal of Insurance

- B.2.1. Evidence of renewal of insurance policies shall be provided to the County no less than forty-five (45) days prior to expiration date.

B.3. Subcontractors

- B.3.1. Contractor shall ensure all of its subcontractors meet all insurance requirements.

B.4. Receipt and Application of Insurance Proceeds

- B.4.1. Any insured loss under the policies of insurance required of Contractor will be adjusted with County and made payable to County as fiduciary for the insured’s, as their interests may appear, subject to the requirements of any applicable loan clause. County shall deposit into a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no special agreement is reached, the damaged Work shall be repaired or replaced the monies so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Agreement.
- B.4.2. County as fiduciary shall have power to adjust and settle any loss with insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to County’s exercise of this power. If such objection be made, County as fiduciary shall make agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, County as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party of interest, County as fiduciary shall give bond for the proper performance of such duties.

2.1.6 Contract

**Incorporated County of Los Alamos
 Bid Number: IFB24-74
 BATHTUB ROW RECONSTRUCTION PROJECT**

THIS CONTRACT, made and entered into by and between the Incorporated County of Los Alamos, New Mexico, hereinafter called the County and _____, a _____ (State and entity status), hereinafter called the CONTRACTOR, is executed on the date set forth opposite the signature of the authorized representatives of the parties.

WHEREAS, the Contractor was awarded the Contract for the Incorporated County of Los Alamos: **Invitation for Bids Number IFB24-74, BATHTUB ROW RECONSTRUCTION PROJECT** and said award was approved by the County on _____, which date shall be deemed to be the date of this Contract.

THE PARTIES AGREE:

ARTICLE 1 – SUBJECT MATTER – The Contractor shall perform the Work, and shall furnish all the materials, equipment, tools, labor and all supplies, appliances, and appurtenances necessary to the full completion of the Work on the Project, and in accordance with the language of the Contract and the Solicitation documents. The term “Contract” means the Solicitation. The Work shall be performed in accordance with the Contract, which shall be interpreted to give full effect to all of the terms and conditions herein. In the event of a conflict in the terms and provisions of the Contract, the terms and provisions of the Contract shall control in the following order:

- A. Change Orders
- B. Addenda
- C. Contract
- D. Notice to Contractors
- E. Special Conditions
- F. General Conditions
- G. Technical Specifications
- H. Contract Drawings

ARTICLE 2 – CONTRACT TIME –

- E. Construction shall start on or after the date specified on the Notice to Proceed. **The Work shall achieve Substantial Completion for only base bid by July 31, 2025. The Work shall achieve Substantial Completion for base bid and bid alternates awarded by August 30, 2025. The Project shall achieve Final Completion by September 30, 2025.** The calendar day period between the substantial completion and final completion dates is for the sole purpose of completing all punch list items.
- A. The Contractor will proceed with the Work at such rate of progress to ensure full completion of the Work by the Final Completion date. It is expressly understood and agreed, by and between the Contractor and the County, that the Contract Time for the completion of Work described herein is a reasonable time, and that in submitting a bid on the Project and executing the Contract, the Contractor has taken into consideration the

average climatic and economic conditions and other factors prevailing in the locality where the Work is to be performed.

B. Termination of the Contract-

1. This contract shall terminate upon County's issuance of Notice of Final Completion, provided however, that Contractor's warranty obligations and any warranties listed within the Technical Specifications for materials, equipment, systems and/or labor supplied through the Contractor for the execution of the Work shall survive the termination of this Contract until such time as County determines that Contractor's warranty obligations have been fulfilled and County has specifically released Contractor, in writing or by the individual warranty expirations, from such obligations. The issuance of Notice of Final Completion or the release of surviving Contractor obligations shall not be deemed a waiver of any claim the County may have against Contractor arising from Contractor's performance under this Contract.
2. County may terminate this Agreement with or without cause upon ten (10) days prior written notice to Contractor. Upon such termination, Contractor shall be paid for work actually completed to the satisfaction of County at the rates agreed upon by the parties hereto. Contractor shall render a final report of the work done to the date of termination and shall turn over to County originals of all materials, documents or other deliverables prepared pursuant to this Contract.
3. Funding. This Agreement shall terminate without further action by County on the first day of any County fiscal year for which funds to pay compensation hereunder are not appropriated by the County Council. County shall make reasonable efforts to give Contractor at least ninety (90) days advance notice that funds have not been and are not expected to be appropriated for that purpose.

ARTICLE 3 – LIQUIDATED DAMAGES FOR DELAY OR INCENTIVES FOR EARLY COMPLETION –

- A. Liquidated Damages: Should the Contractor fail to complete the work within the time agreed upon in the Contract, Contractor will be assessed liquidated damages for each calendar day beyond Substantial, and/or Final Completion dates, including all executed change orders. Liquidated damages will be assessed in accordance with the current edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction section 108, Table 108.8:1 Schedule of Liquidated Damages. In view of the difficulty of estimating the damage, this amount is fixed by parties as the liquidated damages that the County will suffer by reason of such default and not by way of penalty.

**Table 108.8:1
Schedule of Liquidated Damages**

Total Original Contract Amount (\$)	Charge (\$) per Day
≤100,000	500
>100,000–500,00	1,000
>500,000–1,000,000	1,500
>1,000,000–2,000,000	2,000
>2,000,000–4,000,000	2,500
>4,000,000–7,000,000	3,000
>7,000,000–10,000,000	4,000
>10,000,000	5,000

B. Delays –

1. If the Contractor is delayed at any time in the progress of the Work by any act or neglect by the County, or by changes in the Work, or by labor disputes, fire, unusual delay in transportation, unusual weather, adverse soil conditions other than was described in a geotechnical survey, unavoidable loss by the Contractor, delays specifically authorized by the County, or by unforeseeable or unavoidable causes beyond the Contractor’s control, avoidance, or mitigation, and without the fault or negligence of the Contractor or subcontractor or supplier at any tier, then the Contract Time may be extended by Change Order for such reasonable time as the overall completion of the Work, as the County may in its sole discretion determine that such event has delayed the Critical Path and Completion of the Work, if the Contractor complies with the notice and documentation requirements set forth below.
2. Contractor shall provide a written notice of delay which may result in a request for an extension of time to the County, within ten (10) calendar days from the date the Contractor knew or should have known of the facts giving rise to the delay. The notice shall indicate the cause of the delay, the anticipated length of the delay, and the probable effect of such delay upon the progress of the Work. If the cause of the delay is continuing, the Contractor must give written notice every month at the same time it submits the updated schedule and/or progress report to the County with the Payment Application.
3. Within fifteen (15) calendar days after the elimination of any such delay, the Contractor shall submit a formal Change Order request for an extension of time for such delay. The written request for time extension shall state the cause of the delay, the number of days extension requested, and such analysis and documentation of the schedule of the project and other documentation to demonstrate a delay in the critical path of the Work.
4. If the Contractor does not comply with the notice and documentation requirements set forth above, the Contractor shall have waived its right to a claim for delay.

ARTICLE 4 – COMPENSATION – In consideration of the satisfactory performance of the Work by the Contractor and the acceptance of such Work by the County, Contractor shall be paid an

amount not to exceed the Contract Price of _____ (\$ _____), plus any executed Change Order(s), plus applicable New Mexico Gross Receipts Tax

ARTICLE 5 – PROGRESS PAYMENTS –

- A. Contractor shall submit (but not more often than once a month), to the County for review an Application and Certification for Payment as shown herein, filled out and accompanied by such supporting documentation as is required by the Agreement and also as the County may reasonably require. The County has seven (7) calendar days to review the Application for Progress Payment either to accept or reject. If application is rejected, Contractors shall resubmit a new Application for Progress Payment. Upon any re-submittal of Application for Progress Payment, the twenty-one (21) calendar day time frame is reinstated. These applications for payments shall be based on the performance of the Work in accordance with the Contract Documents. Contractor shall submit Earned Value Curve if required by the Project Manager with each Application for Payment,
- B. Contractor warrants and guarantees that title to all work, material and equipment covered by an Application for Progress Payment, whether incorporated in the Project or not, will pass to County at the time of payment free and clear of all liens, claims, security interests and encumbrances.
- C. Prior to Substantial Completion, the County with the concurrence of the Contractor may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.
- D. As provided herein, County may refuse to make payment of the full amount requested by the Contractor. County will provide Contractor with written notice (with copy to Engineer) stating the reasons for such action.
- E. If payment is requested and approved by the Project Manager on the basis of materials and equipment not incorporated in the Work, but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Progress Payment shall also be accompanied by such data, (receipts, invoices, packing lists, delivery tickets, etc.) satisfactory to Owner and will establish Owner's title to the material and equipment and project. Contractor is responsible for all loss or damage to stored materials.
- F. Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to County no later than time of payment, free and clear of all liens.
- G. In the event that agreement between the County or County's designee and Contractor cannot be reached, the County will pay the portion not in question and attempt to reach agreement on those portions not in agreement in the next billing cycle.
- H. Payment may be made by mutually agreed upon method.
- I. County has full power to withhold payment and release of Contractor's Performance as well as Labor and Materials Bonds until all the work is completed to the County's satisfaction, until the Contractor shall satisfy the County that it has fully settled or paid for all labor performed and materials, supplies, equipment rentals and services used from the respective suppliers and subcontractors involved, and to withhold payment equal to liquidated damages as accepted payment for liquidated damages.

- J. County at its sole discretion may require an Affidavit of Payment and Release of Liens with every Application.
- K. Unless otherwise specified in the Solicitation Documents as a Notice of Extended Payment, permitting the Owner to make payment within a period not to exceed 45 days, payments shall be made within twenty-one (21) calendar days from receipt of an undisputed request in accordance with the New Mexico Prompt Payment Act, Sections 57-28-1 et seq. NMSA 1978.
- L. Final Application for Payment
 - L.1. The final Application for Progress Payment shall include a notarized Affidavit of Payment and Release of Liens.
 - L.2. After Contractor has completed all such corrections to the satisfaction of the County and delivered in accordance with the Contract Documents all maintenance and operating instructions, all materials including but not limited to spare parts, lubricants, etc., as required by Contract documents, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, Notice of Termination for NPDES, marked up record documents showing work as constructed (as-builts), video recordings, Contractor may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied (except as previously delivered) by all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required, consent of surety, if any, to final payment, and complete and legally effective releases or waivers (satisfactory to County) of all liens arising out of or filed in connection with the Work. If any subcontractor or supplier fails to furnish such release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any lien.
- M. Final Payment and Acceptance
 - M.1. On the basis of the Engineer's and Owner's observation of the Work during construction and final inspection and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer recommends to Owner that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Owner shall process final payment. Otherwise, County will return the Application to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application.
- N. The final payment by the County signifies that the Work has been accepted by the County under the conditions of the Contract Documents.
 - N.1. The acceptance by the Contractor of final payment shall be and shall operate as a release to the County of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically expected by the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the County and others relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or the Contractor's sureties from any obligations under the Solicitation documents or the Performance Bond and Labor and Materials Bond.

- O. The making and acceptance of Final Payment shall constitute a waiver of all claims by the Contractor against the County other than those previously made in writing and still unsettled.

ARTICLE 6 – PAYMENT TO MECHANICS AND LABORERS – Contractor agrees to make prompt payment to its subcontractors and suppliers for work performed under the Contract within seven (7) days after receipt of payment from the County and to pay all mechanics and laborers in accordance with Section 57-28-5 NMSA 1978, as applicable. Contractor shall obtain from each supplier of services or materials used in the performance of the Contractor’s obligations under this Contract a written release and waiver of all liens against the County and Project. Such releases and waivers of lien shall be submitted to the County with the final Application for Payment and may be required with each Application for Payment at the County’s sole discretion.

Additionally, all Sub-contractors shall require that their Sub-contractors and suppliers make prompt payment to their Sub-contractors and suppliers for amounts owed for work performed on the construction project within seven days after receipt of payment from the owner, contractor or Sub-contractors

If the contractor or Sub-contractors fails to pay the contractor’s or Sub-contractor’s subcontractor and suppliers by first-class mail or hand delivery within seven days of receipt of payment, the contractor or subcontractor shall pay interest to the subcontractors and suppliers beginning on the eighth day after payment was due, computed at one and one-half percent of the disputed amount per month or fraction of a month until payment is issued. These payment provisions apply to all tiers of contractors, subcontractors and suppliers.

ARTICLE 7 – MODIFICATION OF CONTRACT – This Contract may be modified only by mutual written consent of the parties.

ARTICLE 8 – INDEMNITY – Contractor shall indemnify, hold harmless and defend County, its Council members, employees, agents and representatives, from and against all liabilities, damages, claims, demands, actions (legal or equitable), and costs and expenses, (including without limitation fees for attorneys and other professionals, of any kind or nature), arising from Contractor’s performance or failure to perform hereunder or breach hereof or the performance or failure to perform of Contractor’s employees, agents, representatives and subcontractors.

All representations, indemnifications, warranties, and guarantees made in, required by or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment to the extent permitted by New Mexico or other applicable law, completion and acceptance of the Work and termination or completion of the Agreement.

ARTICLE 9 – NON-ASSIGNMENT – Contractor may not assign this Agreement or any privileges or obligations herein without the prior written consent of the County.

ARTICLE 10 – LAWS, REGULATIONS, JURISDICTION AND VENUE – Contractor shall abide by all applicable federal, state and local laws, regulations, and policies and shall perform the Work in accordance with all applicable laws, regulations, and policies during the term of the Contract.

In any lawsuit or legal dispute arising from the operation of this Contract Contractor agrees that the laws of the State of New Mexico shall govern. Venue shall be in the First Judicial District court of New Mexico in Los Alamos County, New Mexico.

IN WITNESS whereof the parties have executed this Contract.

CONTRACTOR

Date: _____

By: _____

Print Name: _____

Title: _____

INCORPORATED COUNTY OF LOS ALAMOS:

Date: _____

By: _____

Anne W. Laurent, County Manager

ATTEST

By: _____

Naomi Maestas, County Clerk

APPROVED AS TO FORM

J. Alvin Leaphart, County Attorney

3.0 CONSTRUCTION PHASE

3.1 Construction Phase Related Forms

3.1.1 Contractor Personnel Information

The Contractor will provide at the pre-construction meeting and update as necessary the following information to the County:

- A. Contractor’s Project Manager: _____
- B. Contractor’s Superintendent: _____
 - 1. Address: _____
 - 2. Telephone No.: _____
 - 3. Email Address: _____
- C. Emergency Contact Information:
 - 1. Name: _____
 - 2. Phone No.: _____
 - 3. Name: _____
 - 4. Phone No.: _____
 - 5. Name: _____
 - 6. Phone No.: _____
 - 7. Name: _____
 - 8. Phone No.: _____
- D. List of authorized signatures for: Certified Payroll, Payroll Affidavits, Change Orders, Progress Payment Certifications.
 - 1. Name: _____
 - 2. Title: _____
 - 3. Name: _____
 - 4. Title: _____
- E. Project Safety Officer: _____
- F. Equal Employment Opportunity Officer: _____

The person listed in “B” will become the Contractor’s Representative of Record. The Contractor will not be allowed more than one (1) Representative. The Contractor’s Representative shall supervise the project and be available at all times when construction is in progress.

3.1.2 Notice to Proceed

Date: _____

To: _____

Address: _____

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

You are notified that the Contract time under the above contract will start on _____, 2024. By that date you are to start performing your obligations under the Contract. You are required to return an acknowledged copy of this Notice to Proceed to the County’s Designee before commencing any work and meet all other requirements of the Contract. The date of Substantial Completion of all work is therefore _____, 2025, and Final Completion of all work is therefore _____, 2025.

Incorporated County of Los Alamos

Anne W. Laurent
County Manager

3.1.3 Acceptance of Notice to Proceed

Receipt of the Notice to Proceed is hereby acknowledged this _____ day of _____, 2024 for the following project:

**Incorporated County of Los Alamos
Bid Number: IFB24-74
BATHTUB ROW RECONSTRUCTION PROJECT**

CONTRACTOR:

By: _____

Print Name: _____

Title: _____

3.1.4 Application and Certification for Payment Part 1



APPLICATION & CERTIFICATION FOR PAYMENT

County of Los Alamos - Engineering & Project Management Department

Application Date: _____ Application Number: _____

Project: _____

Period From: _____ to _____ Contractor: _____

Contract Date: _____ Bid Number: _____

Changer Order Summary		
Change Orders approved in previous months by the	ADDITIONS	DEDUCTIONS
TOTAL		
Approved This Month		
Number	Date	
TOTALS <small>Net change by Change Orders</small>	\$ -	

- 1. ORIGINAL CONTRACT SUM \$ _____
- 2. NET CHANGE BY CHANGE ORDERS \$ _____
- 3. CONTRACT SUM TO DATE \$ _____
(line 1 plus line 2)
- 4. TOTAL COMPLETED TO DATE \$ _____
(column F on cont. page)
- 5. RETAINAGE \$ _____
(5% of line 4)
- 6. TOTAL EARNED LESS RETAINAGE \$ _____
(line 4 less line 5)
- 7. BALANCE TO FINISH \$ _____
(line 3 less line 6)
- 8. PREVIOUS TOTAL EARNED LESS RETAINAGE \$ _____
(line 6 from prior application)
- 9. SUBTOTAL OF CURRENT PAYMENT \$ _____
(line 6 less line 8)
- 10. NM GROSS RECEIPTS TAX \$ _____
(5.0625% of line 9)
- 11. CURRENT PAYMENT DUE \$ _____
(line 9 plus line 10)

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all Amounts have been paid by the Contractor for Work for which Previous Certificates for Payment were issued and payments received from the County, and that Current Payments shown herein is now due.

CONTRACTOR:
BY: _____ DATE: _____

State of _____ County of _____

Subscribed and sworn before me this _____ day of _____
20____

Notary Public: _____
My Commission Expires: _____

This Certificate is not negotiable. The Amount Certified is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the County or Contractor under this Contract.

ENGINEERS CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents based on on-site observations and data comprising the above application, the Engineer certifies to the County that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quantity of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the Amount Certified.

AMOUNT CERTIFIED \$ _____
(Attach explanation if amount certified differs from the amount applied for.)

ENGINEER:
BY: _____ Date: _____

3.1.5 Application and Certification for Payment Part 2

3.1.5 Application and Certification for Payment Part 2

APPLICATION & CERTIFICATION FOR PAYMENT
Incorporated County of Los Alamos

Application Date: _____ Application Number: _____

A ITEM No.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F TOTAL COMPLE TED TO DATE (D+E)	G BALANCE TO FINISH (C-F)
			PREVIOUS APPLICATIONS (F)	THIS PERIOD E		
					(F/C)	

Affidavit of Payment and Release of Liens

3.1.6 Affidavit of Payment and Release of Liens

**Affidavit of Payment and Release of Liens
Page 1 of 2**

See page 2 of this form for instructions regarding (A)-(H)

To All Whom It May Concern, To The Following I Do Solemnly Swear And Affirm:

WHEREAS, the undersigned has been employed by (A)

to furnish labor and materials for (B)

work, under a contract (C)

for improvement of the premises described as (D)

in the (E) _____ County of _____,

State of New Mexico of which _____ is the Owner.

NOW, THEREFORE, this _____ day of _____, 20____, for and in consideration of the sum of (F) \$ _____ Dollars paid simultaneously herewith, the receipt whereof is hereby acknowledged by the undersigned, the undersigned does hereby waive and release any lien rights to, or claim of lien with respect to and on said above described premises, and the improvements thereon, and on the monies or other considerations due or to become due from the Owner, on account of labor, services, materials, fixtures, apparatus or machinery heretofore or which may hereafter be furnished by the undersigned to or for the above described premises by virtue of said contract.

The undersigned, as Contractor for the above named Contract pursuant to the Conditions of the Contract hereby certifies that, except as listed below, he/she has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his/her property might in any way be held responsible.

The undersigned hereby certifies that all work required to be done under terms of the above described Contract has been fully performed and completed in conformance with the Contract and that applicable provisions of the New Mexico Public Works Minimum Wage Act (§ 13-4-11 NMSA 1978) have been met.

Affidavit of Payment and Release of Liens
Page 2 of 2

EXCEPTIONS:(G)

INSTRUCTIONS:

1. Person or firm with whom you agreed to furnish either labor, or services, or materials, or both. (A)
2. Fill in the nature and extent of work; strike the word labor or the materials if not in the contract. (B)
3. Identify contract(s) by number, description, and extent of work. (C)
4. Describe improvements and location of the premises to exclude all others. (D)
5. Name community, such as City of ____, Village of ____, or Unincorporated Area known as _____. (E)
6. Amount shown should be the amount actually received and equal to the total adjusted contract. (F)
7. If none, write "None". If required by Owner, Contractor shall furnish bond satisfactory to Owner for each exception. (G)
8. If waiver is for a corporation, corporate name should be used, corporate seal affixed and title of officer signing affidavit should be set forth; if waiver is for a partnership, the partnership name should be used, partner should sign and designate as partner. (H)

(H) _____
(Name of sole ownership, corporation or partnership)

(Signature of Authorized Representative)

TITLE: _____

State of ____ County of _____

Subscribed and sworn before me this ____ day of 2024

Notary Public: _____

My Commission Expires: _____

3.1.7 Field Order

Field Order #	Project:	Date:
IFB #:	Affected Document(s):	
Description of Change(s) (Attach to Design Document Mark-ups):		
Reason For Change(s):		
<input type="checkbox"/> Design Error/Omission <input type="checkbox"/> Design Improvement <input type="checkbox"/> Facilitate Construction <input type="checkbox"/> Criteria Change <input type="checkbox"/> As-found Condition/Record <input type="checkbox"/> Other (describe): _____		
Priority: Low Medium High (Circle One)		
Complexity: Low Medium High (Circle One)		
Preliminary Approval To Proceed By Engineer:		
Review		
	Signature	Date
Originator		
Engineer		
Owner		
Contractor		
Request for Quote issued? _____ Date: _____		
Force Account: _____ Date: _____		
ACCEPTED	<input type="checkbox"/>	Owner
REJECTED	<input type="checkbox"/>	Owner

3.1.8 Change Order



LOS ALAMOS

Incorporated County of Los Alamos Change Order Form

Change Order No.:

Agreement Date:

Name of Project:

Contractor:

The following changes are hereby made to the Contract Documents:

JUSTIFICATION:

CHANGE TO CONTRACT PRICE:

Original Price \$ _____ plus GRT

Current Contract Price adjusted by previous Change Order \$ _____ plus GRT

The Contract Price due to this Change Order will be (_____) by: \$ _____ plus GRT

The new Contract Price, including this Change Order will be \$ _____ plus GRT

CHANGE TO CONTRACT TIME:

SUBSTANTIAL COMPLETION:

Original Contract Time ____ (Date).

Current Contract time adjusted by previous Change Order(s) ___(Date).

The Contract Time will be increased by ___ (Date).

The date for completion of substantial work will be ___ (Date)

FINAL COMPLETION:

Original Contract Time ___(Date).

Current Contract time adjusted by previous Change Order(s) ___(Date).

The Contract Time will be increased by ___(Date).

The date for completion of all work will be ___ (Date).

APPROVALS REQUIRED:

To be effective, this order must be approved by the County Manager; or the Los Alamos County Council if the contract modification, change order, or contract price adjustment exceeds the funding budgeted and specifically appropriated for this project, or as may otherwise be required by the General Conditions.

The adjustment in Contract price and/or Contract time stated in this Change Order shall constitute the total price and/or time adjustment due or owed the Contractor for the work or changes ordered by the Change Order. By executing the Change Order, the Contractor acknowledges and agrees that the stipulated price and/or time adjustments represent full compensation for all adjustments in the cost or the time required to perform the Contract as a whole arising directly or indirectly from the Change Order, including costs and delays associated with the interruption of schedules, extended overheads, delay, and cumulative impacts or ripple effect on all other non-affected work under Contract not changed by the Change Order. Signing of the Change Order constitutes full and mutual accord and satisfaction for the adjustment in contract price and/or time, subject to the current scope of the entire work as set forth in the Contract Documents. Acceptance of this Change Order constitutes an agreement between Owner and Contractor that the Change Order represents an equitable adjustment to the Contract, and that the Contractor will waive all rights to file a claim on this Change Order after it is properly executed.

Requested by Project Manager:

James Malcom, Project Manager

Approved by (County Engineer)

Eric Ulibarri, P.E., County Engineer

Approved by (Public Works Director):

Juan Rael, P.E., Public Works Director

Approved by (Department of Public Utilities):

Philo S. Shelton, III P.E., Manager

Approved by (County Administrator):

Anne W. Laurent, County Manager

If applicable, approved by the County Council on the _____ Day of _____, 2024

Attest:

(County Council)

Print Name _____

Title _____

**INCORPORATED COUNTY OF LOS ALAMOS
CERTIFICATE OF SUBSTANTIAL COMPLETION**



LOS ALAMOS

Date of Issuance: _____

Bid Number: _____

Bid Title: _____

Contractor: _____

Engineer: _____

This Certificate of Substantial/ Final Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

TO:

Contractor

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and failure to include an item in it does not alter the responsibility of Contractor to complete all the Work in accordance with the Contract Documents.

**Certificate of Substantial / Final Completion
(Page 2 of 2)**

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor’s obligations to complete the Work in accordance with the Contract Documents.

Executed by Owner on _____, 2025

Project Manager _____

By: _____
(Authorized Signature)

Accepted by the Engineer on _____, 2025

Engineer _____

By: _____
(Authorized Signature)

Accepted by the Contractor on _____, 2025

Contractor

By: _____
(Authorized Signature)

3.2 Conditions of the Contract - General Conditions

3.2.1 Definitions

Wherever used in any of the Contract documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof unless another meaning is clearly specified:

- A. **The terms “Contract” and “Agreement” are interchangeable when used throughout.**
- B. **Abandoned or Unknown Underground Facilities** – All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which were installed underground and have since been abandoned by Previous Owner. Such utilities will not be located and are not subject to ownership.
- C. **Active Underground Facilities** – All active pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, telephone or other communications, sewage, and drainage removal, or effluent, potable or other pressurized or gravity water. Contractor should exercise due diligence and reasonable care when digging in the event of encountering and working near utilities or facilities that could interfere with the work. Safety for each encounter is primary. These facilities may not be able to be located. Contractor shall be responsible for any costs associated with damage, uncovering, repair, usage, etc.... including delay, and shall include such costs in the proposal.
- D. **Addenda** – Written or graphic documents issued prior to the opening of bid documents which modifies or interprets the Solicitation Documents, Drawings and Specifications, by additions, deletions, clarifications or corrections.
- E. **Application for Payment** – The form accepted by the County which is to be used by Contractor in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract documents.
- F. **Architect** – (See Engineer below)
- G. **Bid** – The documents provided by the County and required documents of the Bidder submitted on the prescribed forms setting forth the prices for the Work to be performed.
- H. **Bidder** – Any person, firm, or corporation submitting a response to the Bid.
- I. **Bid Documents** – Includes but not limited to Advertisement, Invitation to the Solicitation, Summary of Work, Conditions for Bidders, Bid Forms, Plans, Specifications, and including all addenda issued prior to receipt of Bids.
- J. **Bonds** – Bid, Performance, and Labor and Materials Payment Bonds and other instruments of security, furnished by a contractor and the contractor’s surety in accordance with the Solicitation documents.
- K. **Change Order** – A written Amendment to the Contract authorizing an addition, deletion or revision in the Work within the general scope of the Contract documents, or authorizing an adjustment in the Contract, Contract Price or Contract Time.
- L. **Completion Definitions** –

- Substantial Completion** - The date when the Contractor and County consider the entire Work ready for its intended use as evidenced by the Certificate of Substantial Completion.
1. **Partial Utilization** – Use by County at County’s sole option of any substantially completed part of the Work which constitutes a separately functioning and usable part of the Work that can be used by County for its intended purpose without significant interference with Contractor’s performance of the remainder of the Work and may be accomplished prior to Final Completion of all the Work.
 2. **Final Completion** – The date when the Contractor and County consider the entire Work to be complete, including all outstanding Punch List items. Contractor shall at the completion of work, remove all debris and other rubbish from the project site and shall remove all its tools and surplus materials and shall leave the project site clean. If the Contractor fails to clean up, the County may do so and subtract the cleanup cost from the Contractor’s final payment. Contractor shall legally dispose of all construction debris at the Contractor’s expense.
- M. **Contract Documents** – The written contract between County and Contractor covering the work to be performed, including but not limited to all associated documents contained in the Solicitation:
1. Addenda to the Solicitation, Summary of Work, Conditions for Bidders, Bid Forms, Award Forms, Contract Application and Certification of Payment, Conditions of the Contract, General Requirements, Notices to Contactor, Technical Specifications and Plans, Contractor’s Bid and Documentation submitted by Contractor prior to Notice of Award, Bonds, Written Amendments to any Contract Document, Change Orders, Field Orders, and County’s written interpretations and clarifications issued on or after the Effective Date of the Agreement, all of which are incorporated by reference and made a part of this Contract as fully as if herein repeated and a copy of which the Contractor acknowledges hereby that he has received. Engineer’s written interpretations and clarifications issued on or after the Effective Date of the Contract as identified and incorporated by reference therein.
 2. Shop drawing submittals approved and the reports and drawings referred to in Section 3, paragraph 3.11 are not Contract documents.
- N. **Compensation** – The total monies payable to the Contractor under the terms and conditions of the Contract documents, and includes all County-approved changes thereafter.
- O. **Contract Time** – The time period stated in the Contract documents for the Contractor’s completion and County’s acceptance of the Work.
- P. **Contractor** – The person, firm or corporation with whom the County has executed the Agreement.
- Q. **County** – Incorporated County of Los Alamos
- R. **Defects and /or Defective Work** – Work that is unsatisfactory, faulty or deficient, in that it does not conform to the contract documents, or does not meet the requirements of any inspection, reference standard, test, or approval, or Work that has been damaged prior to final payment.
- S. **Emergency** – A sudden, unexpected, or impending situation that poses and immediate risk to health, life, property or environment, including but not limited to the safety or protection of the Work, or property, real or personal, at the site or on related construction and staging areas and roads, or property adjacent thereto.

- T. **Engineer** – or the Engineer’s designated representative who has designed the technical aspects of this project for the County of Los Alamos, includes Architect, and Architect/Engineer.
- U. **Engineer’s (or Architect’s) Resident Project Representative (RPR)** – Provides construction oversight, administration, inspection, and quality assurance services during construction. Also known as Construction Observer.
- V. **Field Order** – A written order effecting a change in the Work which does not involve an adjustment in the Compensation or an extension of the Contract Time, issued by the County Project Manager or Designee to the Contractor during performance of the Work.
- W. **Hazardous Waste** – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
- X. **Lump Sum** – The total single price commitment for paying for all of the Work defined in the Solicitation Documents or a specified portion thereof.
- Y. **Notice of Award** – The County’s written notice that the County is issuing award of the Contract to the Contractor.
- Z. **Notice to Proceed** - The County’s written notice to the Contractor authorizing the Contractor to proceed with Work and establishing the date of commencement of the Work.
- AA. **Owner** – The County of Los Alamos
- BB. **Plans** – The part of the Solicitation documents which show the characteristics and scope of the Work to be performed by the Contractor and which have been prepared or approved by the Engineer.
- CC. **Project Manager** – Owner’s designee who provides construction oversight, administration, inspection, and quality assurance services during construction.
- DD. **Samples** – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be evaluated.
- EE. **Shop Drawings** – All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier, or distributor which illustrate how specific portions of the Work shall be fabricated, performed or installed. Shop drawings shall illustrate some portion of the work and confirm dimensions and conformance to Solicitation documents. Shop drawings are not part of the Contract documents.
- FF. **Specifications** – Written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.
- GG. **Subcontractor** – An individual, firm or corporation having a direct contract with the Contractor (not the County) or with any other Subcontractor for the performance of a part of the Work at the site.
- HH. **Punch List Items** – A list of deficiencies to be corrected by Contractor between Substantial and Final Completion.
- II. **Successful Bidder** – Lowest responsible and responsive Bidder that the County selects for award.
- JJ. **Supplier** – A manufacturer, fabricator, distributor, or vendor etc., having a direct contract with Contractor or any Subcontractor.
- KK. **Unit Price** – Amount to be paid on the basis of individual line item prices.
- LL. **Work** – The entire construction or various separately identifiable parts thereof required to be furnished under the Contract. Work includes and is the result of performing or furnishing and incorporating materials and equipment into the

construction, and performing furnishing services and furnishing documents, all as required by the Contract.

MM. **Written Notice** – Any notice to any party of the Contract relative to any part of the Contract.

3.2.2 Additional Instructions

- A. County may furnish to the Contractor additional instructions and detail drawings, Field Orders or Change Orders as necessary to carry out the Work required by the Contract.
- B. Additional drawings and instructions supplied to the Contractor by the County will become a part of the Contract. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.
- C. The Contractor is responsible for conducting its own, independent quantity take-off for the Work. Following issuance of Notice of Award, but prior to issuance of the Notice to Proceed, the Contractor shall advise the County in writing of any substantive discrepancies between the Contractor's take off, and the itemized line item unit prices.
- D. Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and verify pertinent figures shown thereon and all applicable field measurements.
- E. Contractor shall promptly report in writing to County any conflict, error, ambiguity or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from County before proceeding with any Work affected thereby.
- F. The Contract Documents comprise the entire agreement between County and Contractor concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- G. The Contract Documents will be construed in accordance with the law of the place of the Work.
- H. It is the intent of the Contract Documents to describe a functionally complete Project to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe work, materials, or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifications and interpretations of the Technical Specifications and Contract Drawings shall be issued by the County.
- I. Reference to standards, specifications, manuals, or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time Proposals except as may be otherwise specifically stated in the Contract documents.
- J. If during the performance of the Work, Contractor discovers any conflict, error, or ambiguity, or discrepancy within the Contract documents and any provision of any such Law or Regulation applicable to the performance of the Work or of any such

standard, specification, manual, or code or of any instruction of any Supplier, Contactor shall upon discovery provide to the County written notice thereof and Contractor shall not proceed with the Work affected thereby (except in emergencies affecting the safety or protection of the Work or property at the site or adjacent thereto), until the conflict, error, ambiguity or discrepancy has been resolved through a Field Order or a Change Order.

- K. Except as otherwise specifically stated in the Contract documents or as may be provided by Change Order, the provisions of the Contract documents take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract documents and the provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Document) or the provisions of any Laws, Regulations, policies or procedures applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract documents would result in violation of such Law or Regulation). No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of County, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Bid documents, nor shall it be effective to assign to County, Engineer, or any of Engineer's Consultants, agents or employees any duty or authority to supervise or direct the furnishings of performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract documents.
- L. Whenever in the Contract documents the terms "as ordered," "as directed," "as required," "as allowed," or terms similar to "reasonable," "suitable," "acceptable," "proper," or "satisfactory" are used to describe a requirement, direction, review or judgment of County or Engineer as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing or performance (methods and means) of the Work or any duty or authority to undertake responsibility contrary to any provision of the Contract documents.
- M. The Contractor will develop a document control system for the Project which establishes protocol for acceptance and distribution of all construction related documents. Contractor shall also establish processes for certain standardized documents in the Contract documents and in other pertinent documents as required such as Requests for Information, Submittals, Change Orders, Field Orders, Cost Proposals, Design Notices, and Meeting Minutes and others as necessary during the Pre-Construction Conference. The Contractor shall adhere to these processes and require the same of all their subcontractors.

- N. Contractor shall maintain in a safe place known to the County one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Field Orders, and written interpretations and clarifications in good order and annotated to show all changes made during construction. These record documents together with all approved samples and all approved Shop Drawings will be available to County for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to the County or the County's designee.
- O. Generally, Plans, Specifications and other Contract Documents are provided electronically. If the Contractor requests paper copies, these copies may be furnished upon request at the cost of reproduction.

3.2.3 Schedules, Reports and Records

A. Baseline Schedule -

1. Contractor shall provide a Baseline Schedule for County review and acceptance prior to the Pre-Construction meeting showing the complete sequence of construction by activity with costs loaded by activity as appropriate to depict the value of the activities and the respective rolled-up work packages. This schedule and all updates shall be in Microsoft Project (preferred) or other programs as approved by County.
2. The Contractor shall submit as part of the Baseline Schedule, the proposed number of working days per week; holidays to be observed during duration of Contract by day and month; planned shifts per day and number of hours per shift. Contractor shall notify County at least three (3) working days in advance of any work to be done outside of usual working hours or any change in usual working hours for approval by County.
3. The schedule shall be in sufficient detail to include but not be limited to include significant elements of the work, time frame for each element of work with a beginning and ending point, percentage of progress of work placed or to be placed in a monthly period of time, value of the elements of the work and relationship of elements of work one to the other for the total work under the Contract.
4. The schedule shall show for each activity the durations, early and late start and finish dates, and predecessors. Schedule shall clearly identify one and only one critical path through the whole project.
5. This schedule shall also show timing of all submittals including by not limited to shop drawings, manufacturer's literature, certificates of compliance, materials samples, permits and inspections by outside agencies, operating manuals, and guarantees as required per the Contract documents. The schedule should indicate the type of item and the contract requirement reference. The schedule shall show review time by County, Engineer and sub-consultants for all submittals.
6. Schedule shall also show timing for installation and testing for all equipment and systems.

7. The schedule will be a logically linked schedule and utilize the Critical Path Method (CPM) based on the period of time within which this Contract is to be completed as set forth in the Contract documents. The schedule shall identify the Work in sufficient detail to ensure compliance with Contract dates, schedules, and sequences of construction.
 8. The schedule shall be maintained throughout the life of the Contract. The initial schedule will be the baseline and progress will be compared monthly to this baseline unless a baseline change request is approved in writing by the County. Schedule is Contractor's schedule, prepared by the Contractor, which retains sole responsibility for adherence thereto.
 9. County reserves the right to establish hold points in the schedule before covering work requiring specialty inspections, or work requiring County approval. Such hold points may include but are not limited to inspection of primary electrical feed equipment prior to connecting to the County system, and pressure testing the gas system prior to County installation of gas meter station. Actual hold points will be determined during the progress meetings. Contractor shall give County 48 hour notice in advance of each hold point, and shall schedule a 72 hour hold until it is automatically released.
- B. In the event that the Contractor submits a Baseline Schedule that provides a shorter time for completion of the Project than that provided in the Contract, the Contractor shall not be entitled to any incentive for early completion or damages for delay resulting from any act or omission of County or any other person or entity, occurring between the end of the Baseline Schedule and the Contract Time allowed in Article 2 of the Contract and any change to contract time approved through an executed Change Order.
- C. Schedule Updates with Payment Applications –
1. After submittal and County review and acceptance of the Baseline Schedule, Contractor shall submit all monthly schedule updates to County with each partial payment application.
 2. The updates to the schedule shall show the Work which has been performed and the order in which the Contractor proposes to carry on the remaining Work, including dates at which the Contractor will start and complete the various parts of the Work.
 3. Monthly progress will be assessed at the activity level to determine Earned Value. The percent complete assigned to each task will be determined by mutual agreement between the Contractor and County. Progress payments shall approximate the total Earned Value as calculated for the month. Each month with the submission of the updated schedule with progress, Contractor shall provide a narrative report as needed to define problem areas, anticipated delays, and the impact on the schedule. For any activity which is more than 10% behind approved schedule, contractor shall provide a written corrective action to be taken.
 4. Progress payment applications without an updated project schedule may be rejected by County.

- D. Contractor, at its sole expense shall submit schedules, reports, estimates, records, and other data, as required, in a format approved by the County throughout the duration of the project.
- E. Acceptance of Contractor's schedule by County will not relieve Contractor from compliance with all conditions of the Contract. Errors and omissions in the accepted Contractor's Schedule will not be cause for future claims by Contractor for extra costs or increased Contract Time. Contractor shall adhere to the established progress schedule as may be adjusted from time to time as provided below:
 - 1. Contractor may submit for County acceptance proposed adjustments in the progress schedule that will not change the Contract Times or Milestones.
 - 2. Proposed adjustments in the progress schedule that will change the Contract Times or Milestones shall be submitted as a request for a Change Order. In the event Contractor requests and extension of Contract Time, Contractor shall furnish such justification, CPM data and supporting evidence for a determination.
- F. Contractor shall provide a minimum two (2) week look ahead for all scheduled activities in advance of each regularly scheduled project meeting. County may require this look ahead to be provided in written form.
- G. Work within the County limits after 9:00 p.m. and before 7:00 a.m. requires a Noise Ordinance Relief Permit. Contractor shall adhere to any conditions imposed by the County.
- H. Contractor shall maintain updated as-builts during construction. These shall be made available to the Project Manager for inspection upon request.

3.2.4 Shop Drawings and Submittals

- A. The Contractor shall provide shop drawings, manufacturer's literature, certificates of compliance, material samples, materials colors, guarantees and other materials as may be necessary for the completion of the Work as required by the Contract. The Contractor shall review and designate its approval and deliver all submittals to the Project Manager for review with reasonable promptness and in orderly sequence. The County, at its sole discretion may forward submittal(s) for further review by the County's designee. All submittals shall be properly identified.
- B. Contractor shall comply with the Project Manager and/or Engineer's attached comments. If such qualified review or if re-submission is so directed, Contractor shall make any corrections required or indicated by the Project Manager or Engineer at Contractor's expense.
- C. The approval by the Project Manager or Engineer of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract.
- D. The approval of any shop drawing which substantially deviates from the requirement of the contract shall be evidenced by a Change Order.

3.2.5 Start of Various Types of Work and Management Planning

- A. The County will not allow the Contractor to commence work at the project sites, including mobilization of equipment unless the following submittals/shop drawings/firms as applicable are approved by the Engineer:
1. Traffic Control Plan and Traffic Impedance Plan.
 2. Storm water Pollution Prevention Plans (SWPPP) as specified.
 3. Copies of NPDES Notice of Intent (NOI) as specified.
 4. Name of proposed materials, soil, and concrete testing firm as specified.
 5. Name of proposed registered land surveyor or registered Engineer as specified.
 6. Safety Management Plan.
 7. Any material differences between Contractor's quantity take-off and quantities itemized in the Bid.
 8. Contractor shall obtain a Los Alamos County Business License.
- B. The County will not allow the Contractor to begin excavation unless the following submittals/shop drawings are approved by the County:
1. Excavation/Shoring Plan
 2. Water, sewer, and gas system components (pipe, valve, fittings, manholes, etc.)
 3. Underground electric components
 4. Storm drain and sewer system components (pipe, inlets, manholes, etc.)
 5. Pipe bedding material
- C. The County will not allow the Contractor to commence installation of concrete structures until the following submittals/shop drawings are approved by the County:
1. Concrete mix design
 2. Reinforcing steel
- D. The County will not allow the Contractor to commence installation of road work at the Project Site, unless the following submittals/shop drawings are approved by the County:
1. Structural fill material
 2. Gravel base course
 3. Prime coat/tack coat material
 4. Asphalt Pavement Mix Design
 5. Performance Graded Binder
 6. Storm drain pipe
 7. Hydrated lime
 8. Geotextile material.
- E. Contractor shall deliver to County prior to Substantial Completion Inspection:
1. Certificates of inspection and of occupancy as required by authorities having jurisdiction over the work.
 2. Contractor shall notify the County in writing when the Work is Substantially Complete and request a Certificate of Substantial Completion.
 3. County and/or Engineer shall then inspect the Work and either concur with or decline the request.

4. If accepted, a Certificate of Substantial Completion shall be issued, with a “punch list” of items to be corrected and completed by the Final Completion date and shall include division of responsibilities as applicable between County and Contractor including but not limited to security, operation, safety maintenance, insurance, warranties and guarantees. County shall have the right to exclude Contractor from the Work after the date of Substantial Completion, but County shall allow Contractor reasonable access to complete or correct items on the correction list.
 5. If declined, County shall not issue the Certificate of Substantial Completion
- F. Final Completion –
1. The date when the Contractor and County consider the entire Work is complete, as evidenced by the Certificate of Final Completion.
 2. Contractor shall notify the County in writing when the Work is at Final Completion and request a Certificate of Final Completion.
 3. County and/or Engineer shall then inspect the Work and either concur in or reject the request.
 4. If accepted, a Certificate of Final Completion shall be issued.
 5. If declined, County shall not issue the Certificate of Final Completion. Contractor shall take such measures as are necessary to complete such Work or remedy deficiencies.
 6. Unless otherwise identified in the Bidding Documents, all items below in item G. shall be provided prior to Final Completion.
- G. Prior to County execution of the Certificate of Final Completion, Contractor shall furnish maintenance manuals as called for in Contract documents and Contractor shall provide start up assistance for County as required.
1. Data files of accurately surveyed coordinate points locating all as constructed structures and all buried utilities including depths and inverts of manholes. Use the coordinate system described in the Drawings on the Site Plan General Layout. Data files shall be in a format suitable for importing into AutoCAD drawings. Furnish complete written descriptions of each point and include a brief description of the data (Metadata) describing the data collection process and the names and contract information of the parties responsible for producing the data. Approval documents if the work is constructed in any way at variance to that shown on the Contract documents.
 2. As-built plans in the form of redlined plans with all aspects of the project constructed that deviate from the original plans marked in red on a Full Size (24”x36” or larger if architectural) paper set of plans.
 3. Contractor shall provide vendor training for the County as requested by the Project Manager, covering maintenance and operation of the systems. This may be provided prior to Substantial Completion upon agreement between the County and Contractor.

3.2.6 Materials, Services and Facilities

- A. It is understood that, except as otherwise may be specifically stated in the Contract documents, the Contractor shall provide and pay for the costs and associated taxes for all materials, (except for materials furnished by the County), labor, tools, equipment and machinery, water, light, power, heat, fuel, telephone, sanitary

- facilities, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the Work within the Contract Time.
- B. Materials and equipment shall be stored to insure the preservation of quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located to facilitate prompt inspection.
 - C. Manufactured articles materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.
 - D. Materials, supplies, and equipment furnished by the Contractor shall be in accordance with samples submitted by the Contractor and approved by the County.
 - E. Materials, supplies or equipment to be incorporated into the Work shall not be purchased by the Contractor or any Subcontractor, subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
 - F. Materials and equipment shall be new and of good quality.
 - G. Contractor shall, if required, furnish evidence of the quality of any materials.
 - H. Materials not meeting requirements of the Contract documents shall be removed from project by Contractor without expense to County.
 - I. Materials shall be delivered to the site in original packaging with labels and trademarks intact, and such labels and trademarks shall remain intact until used.

3.2.7 Substitutes or “Brand Name” or Equal

- A. Whenever an item of material or equipment is specified or described in the Contract documents by using the name of a proprietary item or the name of a particular supplier, the specification or description is intended to establish the type, function and level of quality required. Unless the specification or description contains or is followed by word reading that no “like,” “equivalent” or “equal” item or no substitution is permitted, other items of material or equipment of other suppliers may be recommended by Contractor for County’s approval under the following circumstances:
 - 1. “Or-Equal”: Contractor will recommend to County if an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required. It may be considered as an “or-equal” item, in which case review and approval of the proposed item may, in County’s discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.
 - 2. Substitute Items: If an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, it will be considered a proposed substitute item.
 - a. Contractor shall first make written request to Project Manager for acceptance, signifying that the proposed substitute will perform the functions as specified and achieve the results called for by the particular design, functional or performance characteristics which are required.

- (1) Contractor shall submit sufficient information to demonstrate that the item proposed is essentially equivalent to that named and is an acceptable substitute.
 - (2) Contractor will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will impact Contractor's achievement of Substantial Completion, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract documents (or in the provisions of any other direct contract with County for work on the project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated.
 - (3) Contractor shall provide an itemized estimate of all costs or credits which will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by County in evaluating the proposed substitute. County may require Contractor to furnish additional data about the proposed substitute.
3. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Solicitation documents, Contractor may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to County upon recommendation from Engineer. Contractor shall submit sufficient information to allow Engineer to make recommendation to County that the substitute proposed is equivalent to that expressly called for by the Solicitation documents.
4. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each bid or submittal made. County upon recommendation of Engineer will be sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. County may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. Engineer will record time required by Engineer and Engineer's Consultants in evaluating substitutes proposed or submitted by Contractor and in making changes in the Solicitation documents (or in the provisions of any other direct contract with the County for work Project) occasioned thereby. Whether or not Engineer accepts a substitute item so proposed or submitted by Contractor, County reserves the right to charge Contractor for review time by Engineer and Engineer's consultants for evaluation of each such proposed substitute item and for making changes in the Solicitation documents as needed.

5. Contractor's Expense: All data to be provided by Contractor in support of any proposed "or-equal" or substitute item will be at Contractor's expense.

3.2.8 Inspection and Testing

- A. All materials and equipment used in performance of the Work shall be subject to adequate inspection and testing in accordance with generally accepted standards and as required and defined in the solicitation documents.
- B. If required by the solicitation documents, the Contractor shall provide at the Contractor's expense the testing and inspection services.
- C. The Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, paying all costs in connection therewith, and furnishing County/Engineer with the required certificates of inspection, or approval within 72 hours of inspection
- D. The Contractor will give the County/Engineer twenty-four (24) hours' notice of readiness and shall cooperate with inspection and testing personnel to facilitate required inspections or tests. Contractor shall also be responsible for arranging obtaining and paying all costs in connection with any inspections, tests or approvals required for County and Engineer's acceptance of materials or equipment to be incorporated in the Work, or materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- E. Alternately, in accordance with the solicitation documents, the County may assume all responsibility and costs associated with testing; this will be noted specifically.
 1. In the event that more than two (2) tests fail, County may at its discretion, charge the Contractor for all subsequent tests.
 2. Such charges may be deducted from the payment application.
- F. County may at their discretion perform additional testing and inspections as a means of quality assurance.
- G. Inspections, tests or approvals by the County/Engineer shall not relieve the Contractor's obligations to perform the Work in accordance with the requirements of the solicitation documents.
- H. Notice of Defects- Prompt notice of any defective Work of which County or Engineer have actual knowledge will be given to Contractor. All defective Work shall be rejected, corrected, accepted, or accepted with payment adjustments as determined by County.
- I. If any Work is covered contrary to the direction of the County, or if Work is covered prior to testing, Contractor shall uncover it for testing and/or observation by the County. Re-excavation, inspection, testing and replacement of any and all materials and items shall be at the Contractor's sole expense.
- J. If the County directs the Contractor to uncover work where inspections are not required, then
 1. The Contractor shall bear all costs for the re-excavation, inspection, testing, replacement and re-covering of the items if the work did not meet specifications, or

2. If items do meet specifications, Contractor may solicit a Change Order to cover the additional work costs.
- K. Sub-grade, base-course, and asphalt testing shall be conducted by an AMRL (Aggregate Materials Reference Laboratory) certified technician. Cement and concrete testing shall be performed by an ACI (American Concrete Institute) certified technician for lab and field testing.

3.2.9 Correction of Work

- A. The Contractor shall remove at the County's sole discretion from the premises and replace at the Contractor's sole expense all Work rejected by the Engineer or County for failure to comply with the Contract documents, whether incorporated in the project or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract documents. Contractor shall pay claims, cost, losses, and damages caused by or resulting from such correction or removal including but not limited to all costs or repair or replacement of work by others.
- B. If the Contractor does not take action to remove such rejected Work within time specified after receipt of written notice, the County may remove or correct such Work and store the materials. If at the time the County removes or corrects such Work and stores materials and any amount of the Contract Price is then due and owing to the Contractor, the County may deduct from the amount owed to the Contractor the costs incurred by the County for such removal, correction and storage.
- C. In connection with such corrective and remedial action, County may exclude Contractor from all or part of the site, take possession of all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stores at the site or for which County has paid Contractor but which are stored elsewhere. Contractor shall allow County, County's representatives, agents, employees, County's other Contractors and Engineer and Engineer's Consultants access to the site to enable County to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by County in exercising such rights and remedies will be charged against Contractor and a Change Order will be issued incorporating the necessary revisions in the Solicitation documents with respect to the Work; and County shall be entitled to an appropriate decrease in the Contract Price. Such claims, costs, losses and damages will include by not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by County of County's rights and remedies hereunder.
- D. In an emergency where delay would cause serious risk of loss or damage, County may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement including but not limited to all costs of repair or replacement of work of others will be paid by Contractor.

- E. If instead of requiring correction or removal and replacement of defective Work, County with Engineer's recommendation prefers to accept it, County may do so. Contractor shall pay all claims, costs, losses and damages attributable to County's evaluation of and determination to accept such defective Work. If such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contractor documents with respect to the Work and County shall be entitled to an appropriate decrease in the Contract Price. If acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to the County.

3.2.10 Patents

- A. The Contractor shall pay on behalf of the County all applicable royalties and license fees. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless County from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device whether it is specified or not in the Solicitation documents. However, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, trademark or copyright, the Contractor shall be responsible for such loss unless the Contractor notifies the County upon discovery.
- B. Contractor shall indemnify, defend, or at its option, settle any claim or suit against County if such suit or claim is based on a patent, trademark, copyright or trade secret infringement resulting from the Work or use thereof provided that County, upon knowledge of a claim or potential claim of infringement, promptly notifies Contractor and provides Contractor all related information known to County. In the event of a claim of patent, trademark, copyright or trade secret infringement, Contractor agrees to keep County timely informed of material developments with respect to such claim. In the event that a court of competent jurisdiction adjudicates that the Work or any part of it does infringe a third party's patent, trademark, copyright or trade secret, or in the event that County is enjoined from using the Work or any part of it. Contractor shall, at its expense and option, do one of the following: 1) procure for County the right to use the Work or the affected part thereof, or 2) replace the Work or affected part thereof with other suitable work, or 3) modify the Work or affected part hereof to make it non-infringing, or 4) if none of the foregoing remedies are commercially feasible, refund the aggregate payments paid by County for the Work which the County is no longer permitted to use, or the affected part thereof, less reasonable amortization for use.

3.2.11 Surveys, Permits, and Regulations

- A. From the information provided by the County, unless otherwise specified in the Solicitation documents, the Contractor shall develop and make all detailed surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

- B. The Contractor shall carefully preserve benchmarks, property corners, reference points and stakes. When it becomes necessary by reason of construction to remove or obliterate any triangulation station benchmark, property corner, monument, stake, witness mark or other survey reference mark, it shall be the duty of the Contractor to cause, at the Contractor's sole expense, the mark to be re-established by a registered surveyor in accordance with Section 61-23-28, NMSA 1978.
- C. Unless otherwise stated in the Solicitation documents or agreed to in writing by the County all permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations pertaining to the Work as required. If the Contractor observes that the Solicitation documents are at variance therewith, Contractor shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided herein. Changes in the Work. Contractor shall pay for all governmental changes and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening bids. Contractor shall pay all charges of utility connections and payment for use of said utilities for the Work.
- D. A Penetration Permit from the County is required prior to connecting to any gas, water, or sanitary sewer lines. Allow five (5) working days for the County to process the application after submitting. A copy of the Penetration Permit can be obtained from the Los Alamos County Department of Public Utilities (DPU), (505) 662-8130. DPU staff will perform all switching and valve operations.
- E. The Contractor will also need to prepare the plan and file the necessary documentation, obtain approvals, construct and maintain the Storm Water Pollution Prevention Plan (SWPPP) for all job sites, staging areas or other areas required prior to initiation of any site work.
- F. The Contractor will also need to submit and get approval of a Traffic Impedance Permit from the County of Los Alamos, prior to beginning construction as required. Contractor shall apply to the County of Los Alamos for a Traffic Impedance Permit at least ten (10) working days in advance of setting up traffic control signs or barricades for work efforts which will affect the flow of traffic. Contractor cannot proceed with construction until traffic control plans are approved.
- G. The Contractor shall obtain all New Mexico Environment Department (NMED) Air Quality Permits as required, as well as any other required permits including, but not limited to, asbestos abatement, lead abatement and other hazardous material permits in conjunction with the Work.
- H. County projects do not require an Excavation Permit
- I. Neither County nor Engineer shall be responsible for Contractor's compliance with any Laws or Regulations except where otherwise expressly required.
- J. All County permit fees shall be waived with the exception of Solid Waste fees.
- K. Work within the county limits after 9:00 pm and before 7:00 am require a Noise Ordinance Relief Permit. Contractor shall adhere to any restrictions imposed by the County.

3.2.12 Subsurface and Physical Conditions

- A. Any reports on subsurface and physical conditions are included in Section 3.5 Attachments. The County may not have conducted or contracted for Subsurface and Physical Condition Reports.
- B. Contractor may rely upon the general accuracy of the specific “technical data” contained in such reports and drawings and is provided as the best information at that time for the Contractor’s use. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against County, Engineer or any of Engineer’s Consultants with respect to:
 - 1. The completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto, or
 - 2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings, or
 - 3. Any Contractor interpretation of or conclusion drawn from any “technical data” or any such data, interpretations, opinions or information.
- C. Notice of Differing Subsurface or Physical Conditions – if Contractor believes that any subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:
 - 1. Is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided above is materially inaccurate, or
 - 2. Is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent of the character of Work provided in the Solicitation documents; then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing and Work in connection therewith (except in an emergency), notify County and Engineer in writing immediately about such condition. Contractor shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.
 - 3. County will promptly review the pertinent conditions, determine the necessity of obtaining additional exploration or tests with respect thereto and advise Contractor in writing of its findings and conclusions.
- D. Possible Contract Documents Change: If Engineer concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in paragraph 3.3.16, a Change Order may be issued to reflect and document the consequence of such change.
- E. Possible Price and Times Adjustments: An equitable adjustment in the Contract Price or in the Contract Times, or both may be allowed to the extent that the existence of such uncovered or revealed condition causes and increase or decrease in Contractor’s cost of, or time required for performance of the Work subject to the following:

1. Such condition must meet any one or more of the categories described in paragraphs above;
 2. A change in the Contract Documents pursuant to Section 3, Changes in the Work will not be an automatic authorization of nor a condition precedent to entitlement to any such adjustment;
 3. With respect to Work that is paid for on a Unit price basis, any adjustment in contract price will be subject to provisions relating to unit prices;
 4. Contractor shall not be entitled to any adjustment in the Contract Price or Times if;
 - a. Contractor knew of existence of such conditions at the time Contractor made a final commitment to Owner in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or
 - b. The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the site and contiguous areas required by the Solicitation Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice within the time and as required by Section 3, Changes in the Work.
 - d. County, Engineer and Engineer's Consultants shall not be liable to Contractor for any claims, costs, losses or damages sustained by Contractor on or in connection with any other project or anticipated project.
- F. Physical Conditions – Underground Facilities:
1. Shown or Indicated: The information and data shown or indicated in the Solicitation documents or subsequently located by the Active Underground Facilities locating service prior to excavation with respect to existing Active Underground Facilities at or contiguous to the site is based on the information and data furnished by the County of such Active Underground Facilities or by others. County shall not be responsible for the accuracy or completeness of such information or data provided in the Solicitation Documents. The Contractor shall be solely responsible for requesting the marking of the location of Active Underground Facilities by the locating service in accordance with the New Mexico Excavation Law prior to excavation. The cost of all of the following will be included in the Contract Price and Contractor shall have full responsibility for: reviewing and checking all such information and data, locating all Underground Facilities shown, or indicated in the Solicitation documents, or subsequently located by the Active Underground Facilities owner, coordination of the Work with the County of such Underground Facilities during construction, and safety and protection of all such Underground Facilities and repairing any damage resulting from the Work.
 2. Not Shown or Indicated: If any Active Underground Facilities or Abandoned Underground Facilities are uncovered or revealed at or contiguous to the site which was not shown or indicated in the Solicitation documents or was not

subsequently located by the Active Underground Facilities owner in accordance with New Mexico exaction law Contractor shall, promptly after becoming aware of and before further disturbing conditions affected or performing any work in connection therewith (except in an emergency), give written notice to the County, if known, of the Underground Facilities Owner.

3. The Contractor will promptly review the Active or Abandoned Underground Facilities and determine, if possible, the owner of the Underground Facilities. The Contractor shall request that the owner of the Underground Facilities also investigate if the Underground Facilities are Active or Abandoned.
 - a. If the Underground Facilities are Active Underground Facilities the County shall determine the extent, if any, to which a change is required in the Contract documents to reflect and document the consequences of the existence of the Active Underground Facilities. During such time, Contractor shall be responsible for safety and protection of such Active Underground Facilities. Contractor may be allowed and increase in Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Active Underground Facilities that were not shown, indicated, or not subsequently located by the owner of the Active Underground Facilities prior to excavation, and that the Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated.
 - b. If the Underground Facilities are Abandoned Underground Facilities, and they interfere with the excavation or Work by the Contractor, the Contractor is not eligible for an increase in cost. The Abandoned Underground Facilities can be removed or allowed to remain with steps taken to work around the Abandoned Underground Facilities such as cutting, removing and capping the ends.
 - c. If any Abandoned Underground Facilities are transite asbestos pipe or conduit removal, if required or selected by the Contractor, shall be completed and no additional payment will be granted to the Contractor for the proper removal and disposal per the appropriate local, State, and federal regulations.

3.2.13 Protection of Work, Property and Persons

- A. The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The items below shall be included in the Contractor's Safety Management Plan. Contractor will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees, County staff or agents, and public on the Work, including but not limited to:
 1. Required personal safety equipment for personnel and visitors within the work zone;
 2. Proper operation of equipment and power tools;
 3. Proper maintenance of equipment and power tools;

4. Protection of personnel and public within excavation areas;
5. Protection of personnel occupying confined spaces;
6. Welding;
7. Fall protection;
8. Procedures in the event that suspected hazardous materials are encountered and procedures to be used by Contractor and Subcontractors for handling and coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with applicable Laws and Regulations;
9. Precautions for lifting and maneuvering heavy objects;
10. Emergency procedures in the event of wildfire or other fire;
11. Emergency procedures in the event of injury;
12. Emergency procedures in the event of a line break (water, sewer, gas, power, etc.)
13. Flooding;
14. Excavating, trenching, shoring, sheeting, and bracing protection;
15. Pre-job safety planning
16. Designation by Contractor of a qualified and experienced safety representative whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs;
17. Implementation of safety plan for subcontractors;
18. Safety meetings;
19. Procedures for encounters with wildlife, including snakes.

3.2.14 Changes in the Work

- A. The County may at any time, as the need arises, order changes within the scope of the Work without invalidating the Contract. If such changes increase or decrease the amount due under the Contract documents, or in the time required for performance of the Work, an equitable adjustment shall be authorized by Change Order mutually agreed to by the County and Contractor.
- B. The County may at any time, by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the County, unless the Contractor believes that such Field Order entitles the Contractor to a change in the Contract Price or Time, or both, in which event the Contractor shall give the County written notice within seven (7) calendar days after the receipt of the Field Order. Thereafter the Contractor shall document the basis for the change in Contract Price or Time within thirty (30) calendar days. The Contractor shall not execute such changes until receipt of an executed Change Order or further instruction from the County followed by the executed Change Order. .
- C. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the

- original solicitation documents or as amended or modified except in the case of an emergency.
- D. The value of any Work covered by a Change Order or any claim for an adjustment in the Contract Price will be determined as follows:
1. Where the Work involved is covered by unit prices contained in the Solicitation documents, by application of such unit prices to the quantities of the items involved.
 2. Where the Work involved is not covered by unit prices contained in the Solicitation documents, by a mutually agreed lump sum.
- E. Force Account -In the event that an agreed upon price or time cannot be reached, Contractor, when directed, shall proceed on a Force Account (Time and Materials) basis and document all costs and time incurred by the work. Force Account shall include a not-to-exceed amount. Costs shall include all direct and indirect labor, equipment and materials and shall be based on:
1. Actual costs for labor, direct overhead, materials, supplies, equipment, and other services required to complete the work;
 2. In addition there shall be an amount agreed upon, but not to exceed fifteen percent (15%) of the actual cost of such work to cover the cost of general overhead and profit;
 3. Contractor shall establish and maintain records in accordance with generally accepted accounting practices and submit in a form acceptable to the County an itemized cost breakdown together with supporting data, agreed to at the end of each day by the Project Manager and Contractor.
- F. Cost of Work: The term Cost of Work means the sum of all costs necessarily incurred and paid by Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by County, such costs shall include only the following items and shall not include any of the costs itemized in G below.
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by County and Contractor. Such employees shall include without limitation superintendents, foreman, and other personnel employed full time at the site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work after regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by County.
 2. Cost of materials and equipment furnished and incorporated in the Work, including costs of transportation and storage, and Supplier's field services required in connection. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to County and Contractor shall make provisions so that they can be obtained.

3. Payments made by the Contractors to the Subcontractors for Work performed or furnished by Subcontractors. If required by County, Contractor shall obtain competitive bids from subcontractors acceptable to County and Contractor shall deliver such bids to County who will then determine which bids, if any, will be accepted. All subcontracts shall be subject to other provisions of the Solicitation documents insofar as applicable
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain property of Contractor.
 - c. Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by County with the advice of Engineer, and the costs of transportation, loading, unloading, installation, dismantling and removal; all in accordance with the terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, or similar taxes related to the Work, and for which Contractor is liable, imposed by laws and regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by the County), provided loss has resulted from causes other than the negligence of Contractor, any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of County. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee. If, however any such loss or damage requires reconstruction and Contractor is placed in charge thereof, Contractor shall be paid for service a proportional fee as stated above.

- g. The cost of utilities, fuel and sanitary facilities at the site.
 - h. Cost of premiums for additional bonds and insurance required because of changes in the Work.
- G. The term Cost of Work shall not include any of the following:
 - 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor whether at the site or in Contractor's principal or a branch office for general administration of the Work which are to be considered administrative cost covered by the Contractor's fee.
 - 2. Expenses of Contractor's offices other than Contractor's office at the site.
 - 3. Any part of Contractor's capital expenses, including interest and charges for delinquent payments.
 - 4. Original cost of premiums for all Bonds and for all insurance required by the Bid documents to purchase and maintain the same
 - 5. Costs due to the negligence of Contractor, any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.
 - 6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included herein.
- H. The Contractor's fee allowed to Contractor for general overhead and profit shall be determined by an amount not to exceed fifteen percent (15%) of the Cost of Work described above.
- I. For work performed by Sub-contractors the Contractor's fee shall not exceed 5%.
- J. No fee will be allowed for cost of special consultants and supplemental costs as described above.

3.2.15 Suspension, Delay or Termination of Work

- A. At any time and without cause, County may suspend the Work or any portion thereof for a period of not more than 90 days per event by notice in writing to Contractor which will fix the date on which Work may be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be allowed an adjustment in the Contract Price or an extension of the Contract time or both, directly attributable to any such suspension of work, if Contractor receives an approved change order as provided herein.
- B. The County, at its sole discretion may terminate the Contract if the Contractor:
 - 1. Is determined to be and adjudged to be bankrupt or insolvent;
 - 2. The Contractor makes a general assignment for the benefit of the Contractor's creditors;
 - 3. A trustee or receiver is appointed for the Contractor for any of the Contractor's property;

4. The Contractor files a petition to take advantage of any debtor's act, to reorganize under the bankruptcy or applicable laws.
5. Contractor fails to perform the Work in accordance with the Contract Documents including but not limited to:
 - a. The Contractor repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment,
 - b. The Contractor repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment.
 - c. The Contractor disregards laws, ordinances, rules, regulation or orders of any public body having jurisdiction over the Work,
 - d. The Contractor disregards the authority of the County,
 - e. The Contractor otherwise violates any provision of the Contract Documents.
- C. The County may, without prejudice to any other right of surety, within a minimum of ten (10) calendar days from delivery of a written notice, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery owned by the Contractor, and finish the Work by whatever method the County may deem expedient or at County's sole discretion may elect to suspend the work or any portion thereof until the cause for such order has been eliminated. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished.
- D. Contractor shall be paid for Work completed in accordance with the Contract Documents.
- E. If an agreement cannot be reached and the County hires a different Contractor to complete the remaining work or the work is completed by a different means:
 1. The resulting costs incurred by the County will be determined by the County
 2. If such costs exceed such unpaid balance, the County will request that Contractor pay the difference to the County.
 3. If the Contractor refused to pay the difference to the County, the County may terminate the contract and request payment directly from the Contractor's bonding company.
 4. Any unpaid balance of the current Contract Price that exceeds the direct and indirect cost of completing the Work, including compensation for additional professional services, shall not be paid to the Contractor.
- F. Where the Contractor's services have been terminated by the County, said termination shall not affect any right or claim of the County against the Contractor existing at that time or which may thereafter accrue. Any payment by the County due the Contractor will not release the Contractor from compliance with the Contract. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.
- G. After ten (10) calendar days from delivery of a written Notice to the Contractor from the County, the County may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Contract. In such case,

the Contractor shall be paid for all Work executed in conformance with the Contract plus reasonable profit.

3.2.16 Subcontracting

- A. The Contractor may utilize the services of specialty subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty subcontractors. The County must approve the use of any subcontractor.
- B. The Contractor shall not award Work to subcontractor(s), in excess of fifty percent (50%) of the Contract Price, without prior written approval of the County.
- C. The Contractor shall be fully responsible to the County for the acts and omissions of the Contractor's subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is responsible for the acts and omissions of persons directly employed by the Contractor.
- D. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to the Contractor by the terms of the solicitation documents insofar as applicable to the Work of subcontractors and to give the Contractor the same power to terminating any subcontract that the County may exercise over the Contractor under any provision of the Contract.
- E. Nothing contained in this Contract shall create any contractual relation between any subcontractor and the County.

3.2.17 Duties of the Contractor

- A. The Contract contains the provisions required for the construction of the Project. Information obtained from an officer, agent, or employee of the County or another person shall not affect the risks or obligations assumed by the Contractor or relieve Contractor from fulfilling any of the conditions of the Contract. The Contract requires performance of services entirely at the Contractor's risk and Contractor has agreed to indemnify the County from all claims, demands, and actions, arising from the Contractor's actions, errors, or omissions.
- B. The Contractor will supervise and direct all work to be performed pursuant to this Contract. Contractor will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor will employ and maintain at the project site a qualified Superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site and who shall not be replaced without written notice to County.
- C. The Superintendent shall be considered an agent of the Contractor and shall have full authority to act on behalf of the Contractor and all communications given to the Superintendent shall be as binding as if given to the Contractor. The Superintendent shall be present on the site at all times as required to perform adequate supervision and coordination of the services provided pursuant to this Contract. Superintendent shall not be replaced without written approval of the County.
- D. If at any time Contractor or any subcontractor is suspended or debarred from conducting business with any city, county, state or federal government, Contractor has continuing obligation to promptly notify County. County has the option to

terminate Contract or require a different subcontractor at no additional cost to the County.

- E. Superintendent shall track on a daily basis all labor (including classifications), equipment and materials used on site. Superintendent shall communicate this information to the Project Manager or representative. Superintendent and Project Manager shall agree on this usage.
- F. Contractor shall provide competent, suitably qualified personnel to survey, lay out and construct the Work as required by the Contract. Contractor shall at all times enforce strict discipline and good order among all workers at the sites and shall not employ on the Work any unfit person or anyone not skilled in the work assigned to them.
- G. Contractor shall be responsible to see that the completed Work complies accurately with the Contract.
- H. Contractor shall abide by the Los Alamos County Harassment Policy and Procedures #1120.

3.2.18 Job Site Administration

- A. The Contractor is responsible for orderly use and cleanup of all job sites including staging areas and all areas affected by the project to the satisfaction of the County. Outdoor storage space may be obtained by the Contractor at its sole expense.
- B. The County may authorize by the Staging Area License, Contractor's use of land owned by the County. Contractor shall comply with the terms of written agreements.
- C. Construction materials and equipment such as tools, scaffolds, forms and excess material not in use shall be stored or stacked in neat order at the contractor's storage site. Contractor shall at all times as part of its services, keep the sites free from accumulation of waste materials or rubbish caused by Contractors operations.
- D. Contractor shall provide trash receptacles sufficient in number to accommodate all refuse generated within the property and provide for their regular and routine maintenance and servicing. At the completion of the services to be performed in the Contract, Contractor shall remove Contractor's waste materials and rubbish from and about the project, as well as all Contractor's tools, construction equipment, machinery and surplus materials and shall clean all surfaces.
- E. Contractor may provide lighting as necessary for security and safety of materials and equipment. Such lighting shall be down directed and approved by the Project Manager.
- F. Contractor shall provide portable toilets at all job sites sufficient in number to accommodate all waste generated within the site and provide for their regular and routine maintenance and servicing.
- G. Contractor shall restore to original condition all affected property not designated for alteration by the Contract.
- H. Services performed pursuant to this Contract are not to unduly interfere with the County's normal operation and maintenance.

- I. Contractor shall be responsible for all areas of the project used by the Contractor, subcontractors, suppliers or other involved in performance of the services to be performed in the Contract.
- J. Contractor shall have the right to exclude all who have no purpose or function related to the performance or inspection of the services, except personnel employed by the County or other governmental agencies. Contractor may require all persons on the site of the work to observe all regulations that the Contractor requires of its employees. Contractor will exert full control over the site and personnel with respect to use, safety and preservation of property and the existing facilities, except for controls as reserved to County or others.
- K. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Bid documents and other land and areas permitted by Laws and Regulations. Contractor shall assume full responsibility for any damage to any such land or area or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly resolve such claim by negotiation or other proceeding at law.
- L. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless County against all claims, costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against County, Engineer or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- M. Contractor shall be responsible for all materials brought to the job sites by the Contractor, its subcontractors or agents.
- N. Hazardous waste shall be properly stored and disposed in accordance with applicable laws and regulations. The Contractor shall promptly remove all spilled or splattered materials from surfaces to prevent marring, staining, or damage. Adequate clean-up will be evaluated prior to all applications for progress payment.
- O. County shall have the right to enter the premises for the purpose of doing work not covered by the Contract. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work or the restoration of any damaged Work except such as may be caused by agents or employees of the County.
- P. County may perform other work related or unrelated to the Project on the premises using County's own employees, other utility owners, or let other contracts for the performance of work. If there is such work to be performed that was not noted in the Contract, written notice shall be given to the Contractor prior to the start of such work. As directed by the County, Contractor shall provide proper and safe access to the County, contractors and utility owners to the premises and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work.

- Q. Contractor shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of County and the others whose work will be affected.
- R. Gas and Oil Storage, Service Areas, Concrete Batch Plant, Caretaker Dwelling Units- County shall approve the location of equipment areas, gas and oil storage areas, service areas, concrete batch plant and caretaker dwelling units in writing. Contractor shall clear all areas of brush, litter, grass and all other flammable debris for a radius of 50 feet. Caretaker dwelling units subject to approval by County.
- S. Prevention of Oil Spills – If Contractor maintains storage facilities or uses flammable or combustible liquids in the project area, Contractor will provide to the Fire Marshall an operational plan that addresses the use and appropriate measures which will address soil containment and clean-up. Pollutants such as fuels, lubricants and other harmful materials shall not be discharged on the ground.
- T. Contractor, at its sole expense, shall immediately take action to contain and clean up all potentially hazardous spills in the performance of this Contract which are caused by Contractor’s employees directly or indirectly as a result of subcontractor operations and shall immediately report to County and all applicable agencies,. Contractor will be held liable for all damages and costs of additional labor, equipment, supplies, and transportation deemed necessary by the County for the containments and cleanup of potentially hazardous spills caused by Contractor’s employees or resulting from subcontractor operations.
- U. Control of Sources of Ignition – When Contractor uses any process that requires an ignition source, Contractor must provide a plan outlining the process and prior approval must be granted by the Fire Marshall before any ignition source is used within the project area. Areas where welding cutting, burning, or grinding is occurring are to be shielded to prevent flying sparks and debris. Fires shall not be built on the premises.
- V. Communications – The Contractor’s communication system shall provide prompt and reliable communications between Contractor’s crews. Owner shall be able to communicate with Contractor 24/7; Contractor shall be responsive to phone calls and return calls within fifteen (15) minutes.
- W. Contractor shall conduct all activities associated with this project in such a manner that there will not be any adverse impact to archeological sites, trails, identified natural features, fences, gates and private property.
- X. Contractor shall be responsible for all damage to property and to persons, including third parties that occur as a result of its or its agents or employees or subcontractor or subcontractor’s employees fault or negligence.
- Y. Contractor shall cooperate with the owner of all utilities in removal and or rearrangement operations in order that these operations may progress in a reasonable manner and services shall not be unnecessarily interrupted.
- Z. In the event of interruption to utility services because of accidental breakage or as a result of lines being exposed or unsupported, Contractor shall promptly notify Project Manager and owner of the utility and shall cooperate with owner in the restoration of

- services. If utility services are interrupted, cooperation shall be required until service is restored.
- AA. Contractor shall protect all streets, private roads and sidewalks, and shall make all necessary repairs for damage incurred during course of the work at Contractor's own expense.
 - BB. Contractor shall provide proper protection of all furnishings and fixtures likely to be damaged. When exterior openings are made, they shall be covered with weather tight protection at the end of the day's work.
 - CC. Contractor shall take suitable precautions to protect existing trees, shrubs, and other natural vegetation and fences during construction. The Contractor shall restore the area to permit re-vegetation of the area. This includes restoring the area to pre-existing contours, reducing soil compaction by scarification, and mitigating for the effects of runoff. Any fences that need to be removed must be placed or dealt with as specified in Contract Documents. Contractor shall reseed disturbed areas in accordance with NMDOT Specifications or as specified in the Contract Documents.
 - DD. The County will allow Contractor metered usage of water required for construction, to the extent of existing facilities. The Contractor shall obtain a water meter from the Los Alamos County Department of Public Utilities (DPU). Payment to the Utilities Department for the quantity of water used at the prevailing rate will be due before final acceptance of the project. A deposit for the water meter is required by DPU.
 - EE. Contractor shall remove all snow and ice as may be required for the proper protection and performance of the Work and access to job site. Snow and ice shall also be removed by the Contractor from active work zones open to the public.
 - FF. Contractor shall provide all shoring, bracing, and sheathing as required for safety and for proper execution of the work and have some removed when work is completed.
 - GG. Contractor shall provide installation and maintenance of necessary precautions to protect all personnel on the site, including members of the general public from injury or harm, including but not limited to posting of appropriate warning signs in hazardous areas.
 - HH. Contractor shall at all times provide protection against weather (rain, wind, storms, frost, floods or heat) so as to maintain all Work, materials, apparatus, private property and fixtures free from injury or damage. At the end of the day's work, all new Work likely to be damaged shall be protected.
 - II. During cold weather, Contractor shall protect all work from damage. If low temperatures make it impossible to continue operations safely in spite of cold weather precautions, Contractor shall cease work and so notify County.
 - JJ. Contractor may, as part of its work, provide and erect one sign with a minimum size of 2' x 2' with a maximum size of 4' x 8', with the Contractor's name, license number, address and telephone number and locate sign as approved by the County. No other sign or advertisement shall be displayed by the Contractor unless requested or approved by the County.

3.2.19 Engineer's Authority

The Engineer or the Engineer's designated representative may:

- A. Recommend, disapprove, or reject Work which Engineer believes to be defective or will not produce a completed Project that conforms to the Technical Specifications and Contract Drawings or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Technical Specifications and Contract Drawings or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Technical Specifications and Contract Drawings require special inspection or testing of the Work, whether or not the Work is fabricated, installed or completed.
- B. The Engineer or representative may be on site during construction and determine if the Work is proceeding in accordance with Technical Specifications and Contract Drawings. Duties and responsibilities of Engineer may be modified by County as needed.
- C. Inspections may be made at the factory or fabrication plant of the source of material supply.
- D. The Engineer will not be responsible for the construction means, controls, techniques, sequences, procedures or construction safety.
- E. As requested by County or Contractor, Engineer will issue to both County and Contractor with reasonable promptness written clarifications or interpretations of the requirements of the Technical Specification and Contract Drawings (in the form of Drawings or otherwise), which shall be consistent with intent of and reasonably inferable from Technical Specifications and Contract Drawings.
- F. Engineer may authorize minor variations in the Work from the requirements of the Technical Specifications and Contract Drawings which do not involve an adjustment in the Contract Price or the Contract Time and are compatible with the design concept of the completed Project as a functioning whole as indicated by a Field Order and will be binding on the County and also on Contractor who shall perform the Work involved promptly.
- G. Engineer will review and approve Shop Drawings, Samples and submittals in accordance with the schedule of submittals accepted by Engineer. Engineer's review and approval will only be to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Technical Specifications and Contract Drawings and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Technical Specifications and Contract Drawings. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, unless explicitly specified or related to applicable safety precautions or programs. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make corrections required by the Engineer and shall return the required number of corrected copies of the Shop Drawings and submit as required new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

- H. Engineer may assure the quality of work through independent testing. Engineer shall provide test results to the Contractor and copy the Project Manager.

3.2.20 Duties, Responsibilities and Limitations

Duties, responsibilities and limitations of authority of the Resident Project Representative (RPR).

- A. General – RPR is the Engineer’s representative at the site, and will act as directed by and under the supervision of Engineer and will confer with Engineer regarding RPR’s actions. RPR’s dealings in matters pertaining to the on-site work shall in general be with Engineer and Contractor keeping County advised as necessary. RPR’s dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with County with the knowledge of and under the direction of Engineer.
- B. Schedules – Review the progress schedule, schedule of submittals and schedule of values prepared by Contractor and consult with Engineer concerning acceptability.
- C. Conferences and Meetings – Attend meetings with Contractor, such as pre-construction conferences, progress meetings, job conferences and other project related meetings and prepare and circulate copies of meeting minutes.
- D. Liaison – Serve as Engineer’s liaison with Contractor, working principally through Contractor’s Superintendent and assist in understanding the intent of the Technical Specifications and Contract Drawings and assist Engineer in serving as County’s liaison with Contractor when Contractor’s operations affect County’s on-site operations.
- E. Assist in obtaining from County additional details or information when required for proper execution of the Work.
- F. Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or Sample, if the submittal has not been approved by Engineer.

3.2.21 Engineer’s Review of Work, Rejection of Work, Inspections, and Tests

- A. Verify that tests, equipment and systems startups, operating and maintenance training are conducted in the presence of appropriate personnel and that Contractor maintains adequate record thereof, record and report to County appropriate details relative to the test procedures and startups.
- B. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project; record the results of these inspections and report to County.
- C. Modifications – Consider and evaluate Contractor’s suggestions for modification in Drawings or Specifications and report with RPR’s recommendations to County. Transmit to Contractor decisions as issued by County.

3.2.22 Limitations of Authority

Resident Project Representative shall not:

Authorize any deviation from the Technical Specifications and Contract Drawings or substitution of materials or equipment, unless authorized by County and approved by County.

- A. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
- B. Undertake any of the responsibilities of Contractor, subcontractors or Contractor's Superintendent.
- C. Advise on or issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required in the Technical Specifications and Contract Drawings.
- D. Advise on or issue directions regarding, or assume control over safety precautions and programs in connection with the Work.
- E. Accept Shop Drawings or sample submittals from anyone other than Contractor.
- F. Shall not authorize County to occupy the Project in whole or in part.
- G. Participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by County.

3.2.23 Land and Right-of-Way

- A. The County shall provide to the Contractor information which delineates and describes the land owned and rights-of-way acquired.
- B. The Contractor may provide at the Contractor's own expense and without liability to the County any additional land and access thereto that the Contractor may desire for temporary construction facilities or for storage of materials.

3.2.24 Warranty/Guaranty

- A. The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date established as Final Completion or as specified in the Technical Specifications. The Contractor warrants and guarantees for a period of one (1) year from the date of Final Completion that the completed Work is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects, including the repairs of any damage to other parts of the system resulting from such defects. The Contractor shall pay for any and all costs associated with correcting these defects, including but not limited to shipping, travel, labor and parts to repair and or replace the Work. The County will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other Work that may be made necessary by such defects, the County may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through this one (1) year warranty/guarantee period.
- B. All materials shall be of good quality and new. All warranties and guarantees specifically called for by the Specifications shall be provided in writing and expressly run to the benefit of County.
- C. Where defective Work (and damage to other Work) has been corrected, removed or replaced, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- D. All representations, indemnifications, warranties, and guarantees made in, required by or given in accordance with the Contract documents, as well as all continuing obligations indicated in the Contract documents, will survive the final payment, completion and acceptance of the Work and termination or completion of the Agreement.
- E. The Contract shall cover defects which shall be in existence during such two-year period but which shall not become apparent until thereafter.
- F. Contractor shall be fully responsible for all direct, indirect and consequential costs to the County approximately caused by such defects in materials or workmanship including defects in materials or workmanship supplied to the Contractor by a subcontractor or supplier. Contractor shall also hold the County harmless from liability of any kind arising from damage due to said defects.
- G. Contractor shall make all repairs and replacements or payments promptly upon receipt of written order from the County. If Contractor fails to make the repairs, replacements or payments promptly, County may do the work and Contractor and the Contractor's Surety shall be liable for cost thereof, including but not limited to, fees and charges for engineers, architects, attorneys and other professionals.
- H. County will schedule an inspection eleven (11) months after the Final Completion date, providing Contractor with a minimum of one (1) week notice unless the County and Contractor mutually agree to other arrangements. Owner will contact Contractor to report and schedule any further warranty work as provided herein.

3.2.25 Miscellaneous

- A. Taxes – Contractor shall be responsible for the payment of all applicable taxes, including but not limited to the State of New Mexico Gross Receipts Tax.
- B. Independent Contractor – The relationship of the Contractor to the County shall be that of an independent contractor. The Contractor and all employees and subcontractors of the Contractor, shall not be deemed agents or employees of the County. This agreement shall not be construed as a joint venture or partnership between the parties hereto. Nothing in this Agreement burdens the County with the duties of an employer concerning Contractor or any employee or subcontractor of the Contractor, under any state workers' compensation laws, any state or federal occupational health and safety laws or any other state or federal laws.
- C. Contractor's Authority – Contractor shall not enter into any agreement with any person which binds or is intending to bind County to any duty or obligation unless the County has given Contractor prior written consent to represent the County in such matter. Nor shall Contractor make representations to any person which indicate that Contractor is acting on behalf of the County without the County's prior written consent.
- D. Contractor its agents or employees shall make no representation that they are County employees, nor shall they create the appearance of being employees by using a job or position title on a name plate, business cards or in any other manner bearing County's name or logo.

3.2.26 Dispute Resolution, Applicable Law, and Venue

- A. Arbitration – This agreement is not subject to arbitration.
- B. Dispute Resolution Procedure – The Contractor shall submit in writing to the Purchasing Agent, any claim unresolved by the County concerning performance by the parties, in accordance with Los Alamos County Procurement Code, Section 31-232 – Contract Claims. Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with County. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as County and Contractor may otherwise agree in writing.
- C. Applicable Law, Venue – Contractor and County agree that the laws of New Mexico and County Ordinances shall govern any dispute or claim arising from the Contract or the rights, duties and obligations created therein. Contractor and County further agree that all court actions shall be filed and pursued in New Mexico courts, unless the parties mutually agree to a different forum. Venue shall be in the First Judicial Court of New Mexico, Los Alamos, New Mexico.
- D. If the surety on any Bond furnished by the Contractor is declared as bankrupt or becomes insolvent or its right to do business is terminated in New Mexico or it ceases to meet the requirement in Los Alamos Ordinances, Contractor shall within 10 calendar days thereafter substitute another Bond and surety, both of which must be acceptable to County.
- E. When any period of time is referred to in the Contract documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of such period falls on a Saturday or Sunday or on a day made a legal holiday by Los Alamos County, such day will be omitted from the computation. A calendar day of twenty-four hours measured from midnight to the next midnight will constitute a day.

3.2.27 Examination of Records Provisions

- A. The Contractor agrees that the County, and any authorized representative of the County, shall, until the expiration of six (6) years after acceptance of final payment of the Contract Price, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions relating to this Contract.

3.2.28 American with Disabilities Act Compliance

The Contractor will comply with all relevant provisions of the Americans with Disabilities Act, as well as with the New Mexico Human Rights Act, and all other applicable local, state, and federal laws governing the rights of the disabled.

3.2.29 Bids and Proposals are Public Records

Pursuant to the New Mexico Inspection of Public Records Act NMSA- 1978, Chapter 14, Article 2, all materials submitted under this IFB shall be presumed and considered public records. Except to the extent any information may be protected by state or federal law, bids shall be considered public documents and available for review by the public.

3.2.30 Wage Rate Determination

- A. Issuance of the following wage rate determination is done pursuant to Section 13-4-11 N.M.S.A. 1978, as amended, or such successor statute and with duly adopted rules and regulations properly registered with the Supreme Court, as required by law, and other statutes pertaining to public works in New Mexico.
- B. Each certified payroll shall have the correct Wage Rate Decision Number printed clearly on the first page. The Contractor and all Subcontractors shall also submit certified payrolls. Prior to the issuance of a Certificate of Payment, the Contractor shall determine that a certified payroll has been submitted to the State Labor Commission as provided for by State law and that all other provisions applicable to and relating to the payment of wages to artisans, draftsmen, laborers has been abided by and that said payments have been made in accordance with established scales as furnished by the State Labor Commission for this particular contract.

3.3 ATTACHMENTS

3.3.1 License Agreement for Staging Areas

THIS LICENSE AGREEMENT (Agreement) is entered into by and between the **Incorporated County of Los Alamos (County)** and **Contractor, a New Mexico Corporation** to be effective for all purposes on _____.

A. PURPOSE

The purpose of this Agreement is to grant to CONTRACTOR the revocable privilege of using County properties (Properties), more specifically described herein, for staging areas to facilitate CONTRACTOR'S work on **Los Alamos County Project No. IFB24-74**. The County's grant of this revocable privilege shall satisfy County's obligation to provide CONTRACTOR with staging areas under the above-identified Project.

B. TERM

This Agreement shall commence on _____ and shall continue until CONTRACTOR'S work under the above-referenced Project is substantially complete, unless sooner terminated as provided herein.

C. USE OF THE PREMISES

County grants to CONTRACTOR the use of the property described herein for staging areas to include the storage of Project related materials, and the storage of Project related equipment, and for no other purpose.

D. GENERAL REQUIREMENTS APPLICABLE TO ALL PROPERTIES

The following requirements are applicable to all Properties unless specifically addressed or modified in Section E. Specific Properties herein: CONTRACTOR shall:

1. Provide properly anchored portable toilets sufficient in number to accommodate all waste generated within the Property. Locate portable toilets as far as possible away from residential development and provide for their regular and routine maintenance and servicing;
2. Erect a six (6) foot chain fence along all boundaries of the Property unless one exists;
3. Provide covered trash receptacles sufficient in number to accommodate all refuse generated within the property and provide for their regular and routine maintenance and servicing;
4. May provide sufficient lighting necessary for security and safety of persons, material and equipment as well as for the security and safety of the public. Such lighting shall be down directed and produce no glare and conform to the New Mexico Dark Sky Act;
5. Provide and maintain a protective buffer between staging activities and nearby water courses;
6. Provide Good housekeeping measures as outlined in the Storm Water Pollution Prevention Plan (SWPPP) will be adhered to at all times;
7. Provide any applicable utility hook-ups at contractor's coordination and expense;
8. Provide storm water pollution protection and management at his/her expense;
9. Ensure staging area boundaries do not encroach onto other properties or open space.

E. SPECIFIC PROPERTIES

The following specific Properties, including specific uses or limitations to such use, are designated as staging areas for use by CONTRACTOR in conformity with the contract documents and this License.

STAGING AREA “A”: [Canyon Rim and Pueblo Canyon Trail Loop Parking] (Contractor accepts to use area by initialing: _____)

Site-specific requirements are as follows:

1. Weather resistant Information Board for posting required information such as prevailing wage rates, Need to Know information, Notice of Intent, Safety Info, etc.;
2. Fuel storage tank is **not** permitted;
3. Mobile fueling/service truck shall be parked (when not in used) at secured location away from tree line;
4. Mobile fueling/service truck may fuel equipment within a suitable clearing, at least 50 ft. away from the tree line;
5. Heavy equipment storage is permitted;
6. Limited Repair of vehicles and equipment is permitted as per SWPPP;
7. Clearing and grubbing is **not** permitted;
8. Contractor shall not encroach into the tree canopy;
9. Place protection around tree trunks that are located in the driveway;
10. Grading only to extent necessity to efficient use of the property is permitted;
11. Placement of gate across entrance with closure sign is the responsibility of Contractor. Contractor is responsible for providing additional security if deemed necessary by the Contractor.
12. Optional lighting to the extent that surrounding homes are not affected by glare is permitted; to be approved by Project Manager;
13. Limited storage space of traffic control devices and storage containers is permitted;
14. Maximum of two (2) portable toilets are permitted within each Staging Area;
15. All material and equipment must be confined within the defined area;
16. Temporary stock piling of millings, concrete debris and aggregate is permitted in designated locations but shall be protected with best management practices (BMP’s) as per the SWPPP;
17. At completion of the project, grade, sweep and clean all disturbed area at Contractor’s expense;
18. Down slope sides of the area must have sediment control;
19. Any damage done to fence for tennis courts, and pavement is the responsibility of the Contractor to repair at their own expense;
20. Contractor shall provide adequate dust control at proper frequencies within the staging areas;
21. Sweep Staging area *as needed*.

G. ASSIGNMENT

This License is not assignable.

H. RECORDS

CONTRACTOR shall maintain throughout the term of this License records necessary to demonstrate that all of the terms and conditions of the License have been met, including but not limited to records relating to any necessary licenses, permits, and other “authorizations” and compliance with any and rules, regulations, requirements or guidelines applicable to CONTRACTOR’S use of the Properties. CONTRACTOR shall make available for inspection by County all records, books of account, memoranda and other documents pertaining to County immediately upon request of County.

I. STRUCTURES, IMPROVEMENTS, ALTERATIONS OR ADDITIONS

Except as specifically permitted or required herein, no structures, improvements, alterations or additions shall be permitted on the Properties without the prior written authorization of County. CONTRACTOR shall maintain and leave the Properties in a clean condition, free of debris and litter, and restored to their prior condition or as close thereto as is reasonably practicable.

J. LIABILITY

County shall not be liable for any cost of expense or any kind or nature with respect to this License or CONTRACTOR'S use of the Properties, CONTRACTOR shall promptly pay all costs and expenses associated with CONTRACTOR'S use of the Properties including, without limitation, the cost of utility services and fencing. CONTRACTOR shall assure; and provide evidence to County that the insurance maintained by CONTRACTOR under its Contract the performance of work **IFB24-74 Bathtub Row Reconstruction Project** is applicable to and will cover losses resulting from the use of the Properties. CONTRACTOR agrees to indemnify, defend, and hold County harmless from any liability, damage, loss, injury, cause of action, and costs and expenses (including attorneys' fees), of any kind or nature, arising from or in any way related to the use of the Properties, including but not limited to, any liability, damage, loss, injury, cause of action, or costs and expenses (including attorneys' fees) arising from or in any way related to any actual, threatened or alleged disposal, release, or contamination by hazardous substances of the Properties by CONTRACTOR its employees, subcontractors and agents. CONTRACTOR'S obligations under this Section shall survive the expiration or termination of the License.

K. SAFETY

CONTRACTOR shall assure that all of its operations conducted on the Properties are performed in a safe manner.

L. COUNTY ACCESS TO PROPERTIES

County and its designated representatives shall have access to the Properties at all times. CONTRACTOR shall notify County immediately of any situation that may arise on the Properties that may cause damage or harm to the health, welfare or safety of the public or to the environment and property of County and shall fully cooperate with County in addressing any such situation.

M. APPLICABLE LAWS

CONTRACTOR shall comply with all federal, state, and local laws, regulations, ordinances and, other legal requirements applicable to CONTRACTOR'S use of and activities on the Properties. This License shall be construed and enforced according to the Laws of the State of New Mexico.

N. CANCELLATION AND VACATION OF THE PROPERTIES

County may, at its sole discretion immediately cancel this License or any part hereof at any time with or without cause and no further use shall be made of the Properties by CONTRACTOR. Failure of County to fully enforce any and all provisions of this License shall not constitute a waiver of any future breach of any such terms or provisions. Upon expiration or cancellation of this License, the CONTRACTOR shall remove within seven (7) days all equipment, tools, vehicles, and any other property belonging to the CONTRACTOR from the Properties and shall leave the Properties in clean condition, free of debris and litter and restored to its prior condition or as close thereto as reasonably practicable.

ATTEST:**INCORPORATED COUNTY OF LOS ALAMOS**

Naomi D. Maestas
County Clerk

Anne W. Laurent
County Manager

Approved as to Form

J. Alvin Leaphart
County Attorney

Contractor **Title** **Date**

Staging Area A

Canyon Rim and Pueblo Canyon Trail Loop Parking



STAGING AREA “B”: [Betty Ehart Senior Center Overflow Parking Lot] (Contractor accepts to use area by initialing: _____)

Site-specific requirements are as follows:

1. Weather resistant Information Board for posting required information such as prevailing wage rates, Need to Know information, Notice of Intent, Safety Info, etc.;
2. Fuel storage tank is **not** permitted;
3. Mobile fueling/service truck shall be parked (when not in used) at secured location away from tree line;
4. Mobile fueling/service truck may fuel equipment within a suitable clearing, at least 50 ft. away from the tree line;
5. Heavy equipment storage is permitted;

6. Limited Repair of vehicles and equipment is permitted as per SWPPP;
7. Clearing and grubbing is **not** permitted;
8. Contractor shall not encroach into the tree canopy;
9. Place protection around tree trunks that are located in the driveway;
10. Grading only to extent necessary to efficient use of the property is permitted;
11. Placement of gate across entrance with closure sign is the responsibility of Contractor. Contractor is responsible for providing additional security if deemed necessary by the Contractor.
12. Optional lighting to the extent that surrounding homes are not affected by glare is permitted; to be approved by Project Manager;
13. Limited storage space of traffic control devices and storage containers is permitted;
14. Maximum of two (2) portable toilets are permitted within each Staging Area;
15. All material and equipment must be confined within the defined area;
16. Temporary stock piling of millings, concrete debris and aggregate is permitted in designated locations but shall be protected with best management practices (BMP's) as per the SWPPP;
17. At completion of the project, grade, sweep and clean all disturbed area at Contractor's expense;
18. Down slope sides of the area must have sediment control;
19. Any damage done to fence for tennis courts, and pavement is the responsibility of the Contractor to repair at their own expense;
20. Contractor shall provide adequate dust control at proper frequencies within the staging areas;
21. Sweep Staging area *as needed*.
22. Only materials for water and gas lines will be stored in Staging Area B area.

G. ASSIGNMENT

This License is not assignable.

H. RECORDS

CONTRACTOR shall maintain throughout the term of this License records necessary to demonstrate that all of the terms and conditions of the License have been met, including but not limited to records relating to any necessary licenses, permits, and other "authorizations" and compliance with any and rules, regulations, requirements or guidelines applicable to CONTRACTOR'S use of the Properties. CONTRACTOR shall make available for inspection by County all records, books of account, memoranda and other documents pertaining to County immediately upon request of County.

I. STRUCTURES, IMPROVEMENTS, ALTERATIONS OR ADDITIONS

Except as specifically permitted or required herein, no structures, improvements, alterations or additions shall be permitted on the Properties without the prior written authorization of County. CONTRACTOR shall maintain and leave the" Properties in a clean condition, free of debris and litter, and restored to their prior condition or as close thereto as is reasonably practicable.

J. LIABILITY

County shall not be liable for any cost of expense or any kind or nature with respect to this License or CONTRACTOR'S use of the Properties, CONTRACTOR shall promptly pay all costs and expenses associated with CONTRACTOR'S use of the Properties including, without limitation,

the cost of utility services and fencing. CONTRACTOR shall assure; and provide evidence to County that the insurance maintained by CONTRACTOR under its Contract the performance of work **IFB24-74 Bathtub Row Reconstruction Project** is applicable to and will cover losses resulting from the use of the Properties. CONTRACTOR agrees to indemnify, defend, and hold County harmless from any liability, damage, loss, injury, cause of action, and costs and expenses (including attorneys' fees), of any kind or nature, arising from or in any way related to the use of the Properties, including but not limited to, any liability, damage, loss, injury, cause of action, or costs and expenses (including attorneys' fees) arising from or in any way related to any actual, threatened or alleged disposal, release, or contamination by hazardous substances of the Properties by CONTRACTOR its employees, subcontractors and agents. CONTRACTOR'S obligations under this Section shall survive the expiration or termination of the License.

K. SAFETY

CONTRACTOR shall assure that all of its operations conducted on the Properties are performed in a safe manner.

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CONTRACTOR shall comply with all federal, state, and local laws, regulations, ordinances and, other legal requirements applicable to CONTRACTOR'S use of and activities on the Properties. This License shall be construed and enforced according to the Laws of the State of New Mexico.

N. CANCELLATION AND VACATION OF THE PROPERTIES

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ATTEST:

INCORPORATED COUNTY OF LOS ALAMOS

Naomi D. Maestas
County Clerk

Anne W. Laurent
County Manager

Approved as to Form

J. Alvin Leaphart
County Attorney

Contractor	Title	Date
------------	-------	------

Staging Area B
Betty Ehart Senior Center Overflow Parking



Only materials for water and gas lines will be stored in Staging Area B area.

3.3.2 Wage Rate Information



LABOR RELATIONS DIVISION

401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

226 South Alameda Blvd
Las Cruces, NM 88005
Phone: 575-524-6195
Fax: 575-524-6194

WWW.DWS.STATE.NM.US

Wage Decision Approval Summary

1) Project Title: Bathtub Row Reconstruction Project
Requested Date: 05/17/2024
Approved Date: 05/20/2024
Approved Wage Decision Number: LA-24-1781-A

Wage Decision Expiration Date: 09/17/2024

2) Physical Location of Jobsite for Project:
Job Site Address: 2132 Central Ave
Job Site City: Los Alamos
Job Site County: Los Alamos

3) Contracting Agency Name (Department or Bureau): Los Alamos County
Contracting Agency Contact's Name: Karen Henderson
Contracting Agency Contact's Phone: (505) 663-1856 Ext.

4) Estimated Contract Award Date: 07/30/2024

5) Estimated total project cost: \$5,542,000.00

- a. Are any federal funds involved?: No
- b. Does this project involve a building?: No
- c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No
- d. Are there any other Public Works Wage Decisions related to this project?: No
- e. What is the ultimate purpose or functional use of the construction once it is completed?: Utilities and roadway reconstruction to include replacement of water transmission and distribution lines, fire hydrants, and gas lines. Full depth roadway replacement with curb and gutter and sidewalk improvements. Broadband infrastructure to be installed.

6) Classifications of Construction:

Classification Type and Cost Total	Description
Highway/Utilities (A) Cost: \$5,542,000.00	Utilities and roadway reconstruction to include replacement of water transmission and distribution lines, fire hydrants, and gas lines. Full depth roadway replacement with curb and gutter and sidewalk improvements. Lighting upgrades. Broadband infrastructure to be installed.

PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the state of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

Contracting Agency

- Ensure that all contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All sub-contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only contracting agencies are allowed to close the project. Agents or contractors are not allowed to close projects.

General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all contractors, regardless of amount of work, to the contracting agency within 3 (three) days of award.
- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- When the project has been completed, make sure the Affidavits of Wages Paid (AWP) are sent to the contracting agency.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

Phone: 505-841-4400
Fax: 505-841-4424



Subcontractor

- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

Additional Information

Reference material and forms may be found in the New Mexico Department of Workforce Solutions Public Works web pages at: <https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works>.

CONTACT INFORMATION

Contact the Labor Relations Division for any questions relating to Public Works projects by email at public.works@state.nm.us or call (505) 841-4400.

3.3.3 Geotechnical Report & Supplemental Geotechnical Evaluation



GEOTECHNICAL EVALUATION REPORT

BATHTUB ROW RECONSTRUCTION

Along Bathtub Row
Los Alamos, New Mexico
WT Job No. 32-223627 - 0

PREPARED FOR:

Los Alamos County Public Works Department
2300 Trinity Drive
Los Alamos, New Mexico 87544

Attn: Jeremy Lujan

April 4, 2024



Azupuri Kaba, PhD, PE, PMP
Geotechnical Engineer

Justin Heinecke, PE
Senior Geotechnical Engineer

GEOTECHNICAL ENVIRONMENTAL INSPECTIONS NDT MATERIALS

8305 Washington Place NE,
Albuquerque, New Mexico 87113

(505) 823-4488

wt-us.com

*Building **Confidence** from the Ground Up*

Los Alamos County Public Works Department
 Job No. 32-223627-0

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BORING LOCATION DIAGRAM Plate 1

Los Alamos County Public Works Department
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APPENDIX A

Definition of Terminology A-1
Method of Classification A-2
Boring Log Notes A-3
Boring Logs A-4 to A-7

APPENDIX B

Soil Properties B-1 & B-2

**GEOTECHNICAL EVALUATION
BATHTUB ROW RECONSTRUCTION
BATHTUB ROW
LOS ALAMOS, NEW MEXICO
JOB NO. 32-223627-0**

1.0 PURPOSE

This report contains the results of our geotechnical evaluation for a proposed roadway reconstruction in Los Alamos, New Mexico. The purpose of these services is to provide information and recommendations regarding:

- Subsurface conditions
- Drainage
- Earthwork guidelines
- Groundwater
- Excavation conditions
- Pavement sections

Results of the field exploration, field tests, and laboratory testing program are presented in the Appendices.

2.0 PROJECT DESCRIPTION

Based on the information provided in the RFP, the proposed project will consist of roadway reconstruction in Los Alamos, New Mexico. The proposed reconstruction is approximately 1,500 linear feet of Bathtub Row. Final grading plans were not available at the time of this report. Should any of our information or assumptions not be correct, we should be notified.

3.0 SCOPE OF SERVICES

3.1 Field Exploration

Four (4) test borings were drilled to depths of 5 to 10 feet below existing site grade in the proposed roadway. The borings were at the approximate locations shown on the attached Boring Location Diagram. A field log was prepared for each boring. These logs contain visual classifications of the materials encountered during drilling as well as interpolation of the subsurface conditions between samples. Final logs, included in Appendix A, represent our

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interpretation of the field logs and may include modifications based on laboratory observations and tests of the field samples. The final logs describe the materials encountered, their thickness, and the locations where samples were obtained.

The Unified Soil Classification System was used to classify soils. The soil classification symbols appear on the boring logs and are briefly described in Appendix A. Local and regional geologic characteristics were used to estimate the seismic design criteria and evaluate subsidence zones.

3.2 Laboratory Analyses

Laboratory analyses were performed on representative soil samples to aid in material classification and to estimate pertinent engineering properties of the on-site soils for preparation of this report. Testing was performed in general accordance with applicable standard test methods. The following tests were performed and the results are presented in Appendix B.

- Water content
- Plasticity
- R-Value
- Gradation

3.3 Analyses and Report

This geotechnical engineering report includes a description of the project, a discussion of the field and laboratory testing programs, a discussion of the subsurface conditions, and design recommendations as appropriate to its purpose. The scope of services for this project does not include, either specifically or by implication, any environmental assessment of the site, discovery of underground storage tanks or other underground structures, or identification of contaminated or hazardous materials or conditions. If there is concern about the potential for such contamination, other studies should be undertaken. We are available to discuss the scope of such studies with you.

4.0 SITE CONDITIONS

4.1 Surface

Existing site development consisted of paved roadways in commercial and residential areas. Existing pavement sections along the alignment are about 3½ to 4 inches of asphalt

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concrete overlying 3½ to 4 inches of aggregate base course. Generally, the pavements along the project site were in fair condition with longitudinal and transverse cracking observed along with alligator cracked areas, rutting, dips, and bumps. Photos of the site at the time of our fieldwork are shown below.



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4.2 Subsurface

As presented on the Boring Logs, surface soils to the full depth of exploration consisted of medium dense Silty SAND and stiff Lean CLAY and SILT. Near surface soils are of nil to medium plasticity. Groundwater was not encountered in any of our borings. A detailed description of the soils encountered can be found on the boring logs in Appendix A.

5.0 GEOTECHNICAL PROPERTIES & ANALYSIS

5.1 Laboratory Tests

Near-surface soils are of nil to medium plasticity. These materials are considered as poor to good-quality materials for support of pavements.

5.2 Field Tests

The boring logs included in this report are indicators of subsurface conditions only at the specific location and date noted. Variations from the field conditions represented by the borings may become evident during construction. If variations appear, we should be contacted to re-evaluate our recommendations.

6.0 RECOMMENDATIONS

6.1 General

Recommendations contained in this report are based on our understanding of the project criteria described in Section 2.0 and the assumption that the soil and subsurface conditions are those disclosed by the explorations. Others may change the plans, final elevations, number and type of structures, foundation loads, and floor levels during design or construction. Substantially different subsurface conditions from those described herein may be encountered or become known. Any changes in the project criteria or subsurface conditions shall be brought to our attention in writing. This report does not encompass the effects, if any, of underlying geologic hazards or regional groundwater withdrawal and expresses no opinion regarding their effects on surface movements at the project site.

6.2 Pavements

At the time of this report, traffic information was not available. We assumed that expected traffic would consist primarily of automobile traffic including passenger vehicles, small to medium size trucks, and occasional emergency and dump trucks. On this basis, a daily traffic value of 5 Equivalent 18-kip Single Axle Loads (ESAL) was estimated for the roadway. A resilient modulus (M_r) of 5,167 pounds per square inch was estimated for the roadway based on an R-value of 25. A reliability value of 80 percent was assigned to the facility which corresponds to occasional interruption of traffic for pavement repairs. Based upon these parameters, the resulting pavement sections according to the AASHTO procedure for a 20-year design life are:

Options	Asphalt Concrete Pavement (inches)	Base Course (inches)	Structural Number, SN
1	3.5	8	2.27
2	4.0	6	2.28

Base course and asphalt concrete should conform to the New Mexico Department of Transportation (NMDOT) Standard Specifications for Road and Bridge Construction. Bituminous surfacing should be constructed of dense-graded, central plant-mix, asphalt concrete of an SP-IV or SP-III mix design.

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Job No. 32-223627-0

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Material and compaction requirements should conform to recommendations presented under **EARTHWORK**. The gradient of paved surfaces should ensure positive drainage. Water should not pond in areas directly adjoining paved sections. The on-site subgrade soils may soften and lose stability if subjected to conditions that result in an increase in water content.

The "design life" (20 years) of a pavement is defined as the expected life at the end of which reconstruction of the pavement will need to occur. Normal maintenance, including crack sealing, slurry sealing, and/or chip sealing, should be performed during the life of the pavement.

6.2.1 Pavements on Expansive Soils

Pavement design methods are intended to provide an adequate thickness of structural materials over a particular subgrade such that wheel loads are reduced to a level the subgrade can support. The support characteristics of the subgrade for pavement design do not account for shrink and swell movements of an expansive clayey subgrade such as the soils encountered on this project. Consequently, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell movement of the subgrade. It is therefore important to minimize moisture changes in the subgrade in or to reduce shrink/swell movements. The pavement surface, subbase surface, and adjacent areas should be well drained. Excessive watering of landscaped areas adjacent to pavement should be avoided. Proper maintenance should be performed on cracks in the pavement surface to prevent water from penetrating through to the base or subbase material. Even with these precautions, some movement and related cracking may still occur, requiring periodic maintenance.

7.0 EARTHWORK

7.1 General

The conclusions contained in this report for the proposed construction are contingent upon compliance with recommendations presented in this section. Any excavating, trenching, or disturbance that occurs after completion of the earthwork must be backfilled, compacted and tested in accordance with the recommendations contained herein. It is not reasonable to rely upon our conclusions and recommendations if any future unobserved and untested trenching, earthwork activities or backfilling occurs.

If any unobserved and untested earthwork, trenching or backfilling occurs, then the conclusions and recommendations in this report may not be relied on. We recommend that Western Technologies Inc. be retained to provide services during these phases of the project. Observation and testing of all foundation excavations should be performed prior to placement of reinforcing steel and concrete to confirm that foundations are constructed on satisfactory bearing materials.

7.2 Site Clearing

Strip and remove any existing vegetation, debris, and any other deleterious materials from the pavement areas. The pavement area is defined as that area within the pavement footprint plus 5 feet beyond the perimeter of that footprint. All exposed surfaces should be free of mounds and depressions that could prevent uniform compaction.

7.3 Excavation

We anticipate that excavations for shallow foundations and utility trenches for the proposed construction can be accomplished with conventional equipment. The speed and ease of excavation is dependent on the nature of the deposit, the type of equipment used, and the skill and experience of the equipment operator.

On-site soils may become unworkable at high water content. Workability may be improved by scarifying and drying. Over-excavation of wet zones and replacement with granular materials may be necessary. The use of lightweight excavation and compaction equipment may be required to minimize subgrade movement.

The soils to be penetrated by the proposed excavations may vary significantly across the site. Our soil classifications are based solely on the materials encountered in widely spaced exploratory test boring. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions are found at the time of construction, we should be contacted immediately to evaluate the conditions encountered.

7.3.1 **Temporary Excavations and Slopes**

Temporary, non-surcharged construction excavations should be sloped or shored. The individual contractor should be made responsible for designing and constructing stable,

temporary excavations as required to maintain the stability of both the excavation sides and bottom. All excavations should be sloped or shored in the interest of safety following local and federal regulations, including current OSHA excavation and trench safety standards. OSHA recommends a maximum slope inclination of ¾:1 (horizontal:vertical) for Type A soils, 1:1 for Type B soils, and 1½:1 for Type C soils.

As a safety measure, it is recommended that all vehicles and soil piles should be kept a minimum lateral distance back from the crest of the slope at least equal to the slope height. The exposed slope face should be protected against the elements.

If any excavation, including a utility trench, is extended to a depth of more than 20 feet, it will be necessary to have the side slopes designed by a professional engineer.

We recommend that the contractor retain a geotechnical engineer to observe the soils exposed in all excavations and provide engineering design for the slopes. This will provide an opportunity to classify the soil types encountered, and to modify the excavation slopes as necessary. This also allows the opportunity to analyze the stability of the excavation slopes during construction.

7.4 Pavement Preparations

The subgrade should be scarified, moistened as required, and recompactd for a minimum depth of 12 inches prior to placement of fill and pavement materials.

7.5 Unstable Subgrade Soils

If site soils become excessively wet, pumping and instability should be anticipated. If wet, unstable subgrade soils are encountered during construction, there are several alternatives to mitigate them. The alternatives vary in cost and time to implement, so the alternatives should be evaluated and compared in order to decide which one is most beneficial for the project.

1. The wet, unstable subgrade may be scarified and/or partially removed in order to allow the excess moisture to evaporate. The soils should be periodically blended to allow uniform drying to occur. When the soils are near optimum moisture content, they should be compacted in accordance with project requirements.

2. The wet, unstable subgrade may be removed and replaced with drier, granular soil and/or aggregate base course. The depth of removal necessary will vary depending on the conditions in each unstable area. It may be best to remove a uniform thickness of 2 feet in each area. Although the wet, unstable soils may extend to a depth greater than 2 feet, the granular material should bridge over these deeper wet soils. Removal should be performed with an excavator or similar piece of equipment so that underlying wet soils will not be adversely affected by wheel loads and thereby become more unstable. The first foot of granular backfill should be placed at near-optimum moisture content and compacted using static (non-vibrating) equipment to at least 90 percent of the maximum dry density. The second foot of granular material may then be placed and compacted in accordance with project requirements.
3. Geogrid and aggregate base course may be used to bridge over wet subgrade soils. Wet, unstable subgrade should be removed to a depth of at least 1 foot and to a distance at least 2 feet beyond the edge of the unstable area. Removal should be performed with an excavator or similar piece of equipment so that underlying wet soils will not be adversely affected by wheel loads and thereby become unstable. Geogrid should consist of Tensar InterAx or equivalent and should be installed in accordance with the manufacturer's installation instructions. The geogrid should extend at least 2 feet beyond the edge of the unstable area. Aggregate base course (not just granular soil) should be placed over the geogrid and compacted in accordance with project requirements.
4. Wet, unstable subgrade soils at the site may be mixed with dry portland cement or hydrated lime. For cost-estimating purposes, it may be assumed that 5 percent by dry weight of the soil will be required to stabilize the site soils and that treatment to a depth of 1 foot will be required to bridge over the unstable areas. The depth of treatment and quantity of cement or lime may be modified during construction depending on the results achieved. It should be noted that the portland cement will not chemically react with the clay component of the soil; however, the cement will dry the soil and will provide cementation of the coarse-grained particles in the soil. Since the dry cement will react with the excess moisture in the subgrade soils, additional water will need to be added to achieve moisture contents near optimum prior to compaction of the soils. The blended soil should be compacted and tested in accordance with project requirements.

The extent of the unstable areas to be treated may be identified by proof rolling the exposed materials with a 20-ton, tandem-axle, dual-wheel water truck or dump truck loaded to the legal limit with tires inflated to 100 psi. Areas where soil movement is observed more than 6 inches away from the truck’s rear tires should be considered unstable.

7.6 Materials

Clean imported or on-site soils with low expansive potentials and a maximum dimension of 6 inches or imported materials may be used as fill material for the following:

- Pavements
- Backfill/Embankment

Frozen soils should not be used as fill or backfill.

Imported soils should conform to the following:

- Gradation (ASTM C136): percent finer by weight

6"	100
4"	85-100
¾"	70-100
No. 4 Sieve	50-100
No. 200 Sieve	30 (max)
- Maximum Plasticity Index 5
- Maximum soluble sulfates (%) 0.10

On-site clay soils should not be used as fill or backfill.

Base course should conform to the New Mexico Department of Transportation (NMDOT) Standard Specifications for Road and Bridge Construction.

7.7 Placement and Compaction

- a. Place and compact fill in horizontal lifts, using equipment and procedures that will produce recommended water contents and densities throughout the lift.

- b. Uncompacted lift thickness should not exceed 10 inches.
- c. Materials should be compacted to the following:

**Minimum Percent
Material Compaction (ASTM D1557)**

- On-site or imported soil, reworked and fill below pavement 95
- Aggregate base below pavement 95
- Nonstructural backfill 90

Imported and on-site low expansive soils should be compacted within a water content range of 3 percent below to 3 percent above optimum. On-site clayey soils should be compacted to within a water content range of 1 percent below to 3 percent above optimum.

7.8 Compliance

Recommendations for foundations and slabs-on-grades supported on compacted fills or prepared subgrade depend upon compliance with the **EARTHWORK** recommendations. To assess compliance, observation and testing should be performed under the direction of a WT geotechnical engineer. Please contact us to provide these observations and testing services.

8.0 PLAN REVIEW

Foundation and grading plans were not available at the time of this report. WT should be retained to review the final plans to determine if they are consistent with the recommendations presented in this report. If the Client does not retain WT to review the plans and specifications, WT shall have no responsibility for the suitability of the plans for project application.

9.0 ADDITIONAL SERVICES

The recommendations provided in this report are based on the assumption that a sufficient schedule of tests and observations will be performed during construction to verify compliance. At a minimum, these tests and observations should be comprised of the following:

- Observations and testing during site preparation and earthwork,
- Observation of foundation excavations, and
- Consultation as may be required during construction.

Retaining the geotechnical engineer who developed your report to provide construction observation is the best way to verify compliance and to help you manage the risks associated with unanticipated conditions.

10.0 LIMITATIONS

This report has been prepared assuming the project criteria described in **2.0 PROJECT DESCRIPTION**. If changes in the project criteria occur, or if different subsurface conditions are encountered or become known, the conclusions and recommendations presented herein shall become invalid. In any such event, WT should be contacted in order to assess the effect that such variations may have on our conclusions and recommendations. If WT is not retained for the construction observation and testing services to determine compliance with this report, our professional responsibility is accordingly limited.

The recommendations presented are based entirely upon data derived from a limited number of samples obtained from widely spaced explorations. The attached logs are indicators of subsurface conditions only at the specific location and time noted. This report assumes the uniformity of the geology and soil structure between explorations, however variations can and often do exist. Whenever any deviation, difference, or change is encountered or becomes known, WT should be contacted.

This report is for the exclusive benefit of our client alone. There are no intended third-party beneficiaries of our contract with the client or this report, and nothing contained in the contract, or this report shall create any express or implied contractual or any other relationship with, or claim or cause of action for, any third party against WT.

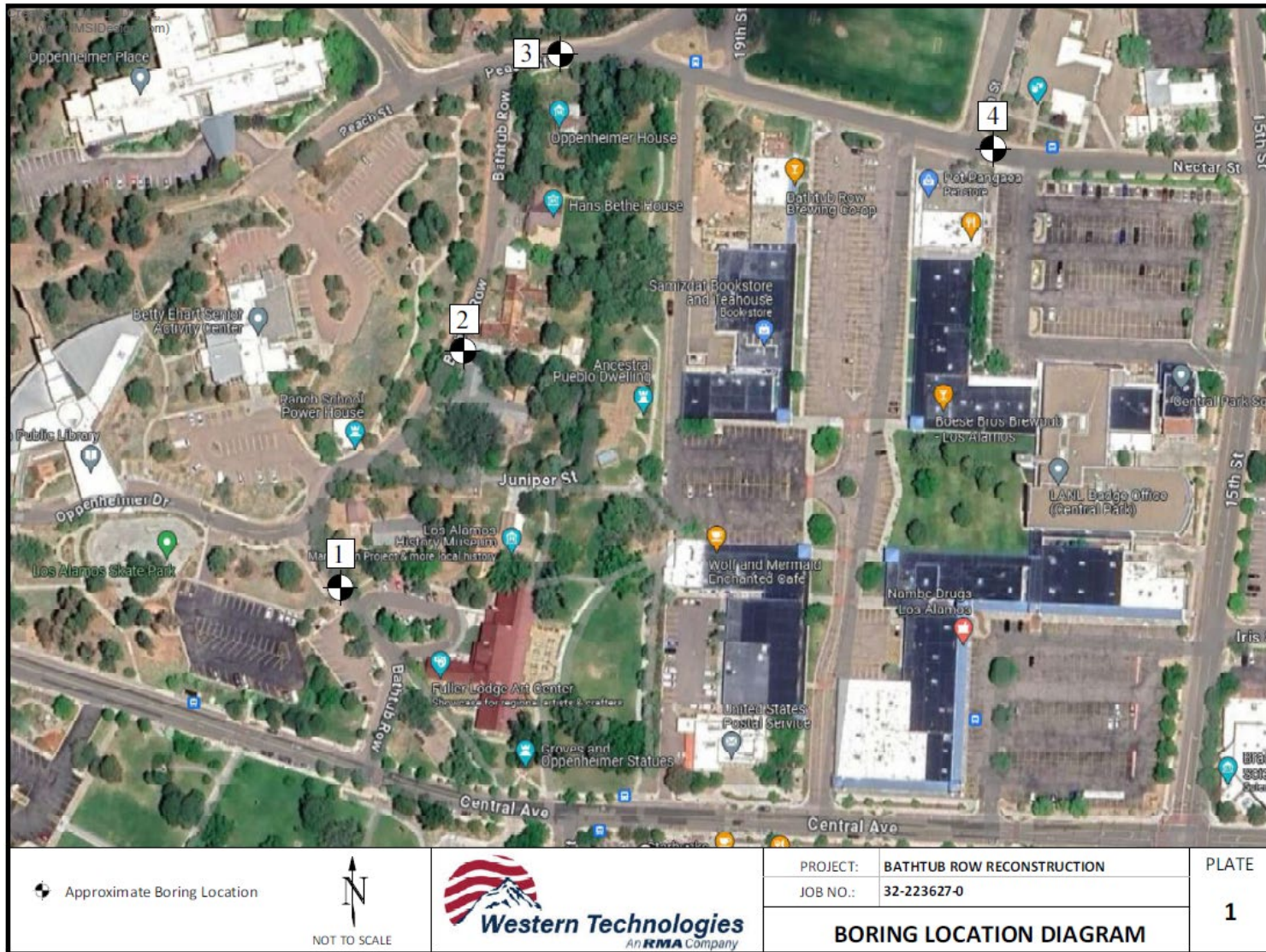
Los Alamos County Public Works Department
Job No. 32-223627-0

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This report is valid for the earlier of one year from the date of issuance, a change in circumstances, or discovered variations. After expiration, no person or entity shall rely on this report without the express written authorization of WT.

11.0 CLOSURE

We prepared this report as an aid to the designers of the proposed project. The comments, statements, recommendations, and conclusions set forth in this report reflect the opinions of the authors. These opinions are based upon data obtained at the location of the explorations, and from laboratory tests. Work on your project was performed in accordance with generally accepted standards and practices utilized by professionals providing similar services in this locality. No other warranty, express or implied, is made.



Allowable Soil Bearing Capacity	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified aggregate material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson/Drilled Shaft	A concrete foundation element cast in a circular excavation which may have an enlarged base (or belled caisson).
Concrete Slabs-On-Grade	A concrete surface layer cast directly upon base course, subbase or subgrade.
Crushed Rock Base Course	A base course composed of crushed rock of a specified gradation.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Engineered Fill	Specified soil or aggregate material placed and compacted to specified density and/or moisture conditions under observations of a representative of a soil engineer.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Existing Grade	The ground surface at the time of field exploration.
Expansive Potential	The potential of a soil to expand (increase in volume) due to absorption of moisture.
Fill	Materials deposited by the actions of man.
Finished Grade	The final grade created as a part of the project.
Gravel Base Course	A base course composed of naturally occurring gravel with a specified gradation.
Heave	Upward movement.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting or other methods of extraordinary force for excavation.
Sand and Gravel Base Course	A base course of sand and gravel of a specified gradation.
Sand Base Course	A base course composed primarily of sand of a specified gradation.
Scarify	To mechanically loosen soil or break down existing soil structure.
Settlement	Downward movement.
Soil	Any unconsolidated material composed of discrete solid particles, derived from the physical and/or chemical disintegration of vegetable or mineral matter, which can be separated by gentle mechanical means such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material placed to form a layer between the subgrade and base course.
Subbase Grade	Top of subbase.
Subgrade	Prepared native soil surface.

	<p>DEFINITION OF TERMINOLOGY</p>	<p>PLATE A-1</p>
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COARSE-GRAINED SOILS
LESS THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
GW	WELL-GRADED GRAVEL OR WELL-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE
GP	POORLY-GRADED GRAVEL OR POORLY-GRADED GRAVEL WITH SAND, LESS THAN 5% FINES	
GM	SILTY GRAVEL OR SILTY GRAVEL WITH SAND, MORE THAN 12% FINES	
GC	CLAYEY GRAVEL OR CLAYEY GRAVEL WITH SAND, MORE THAN 12% FINES	
SW	WELL-GRADED SAND OR WELL-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE
SP	POORLY-GRADED SAND OR POORLY-GRADED SAND WITH GRAVEL, LESS THAN 5% FINES	
SM	SILTY SAND OR SILTY SAND WITH GRAVEL, MORE THAN 12% FINES	
SC	CLAYEY SAND OR CLAYEY SAND WITH GRAVEL, MORE THAN 12% FINES	

NOTE: Coarse-grained soils receive dual symbols if they contain 5% to 12% fines (e.g., SW-SM, GP-GC).

FINE-GRAINED SOILS
MORE THAN 50% FINES

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
ML	SILT, SILT WITH SAND OR GRAVEL, SANDY SILT, OR GRAVELLY SILT	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50
CL	LEAN CLAY OF LOW TO MEDIUM PLASTICITY, SANDY CLAY, OR GRAVELLY CLAY	
OL	ORGANIC SILT OR ORGANIC CLAY OF LOW TO MEDIUM PLASTICITY	
MH	ELASTIC SILT, SANDY ELASTIC SILT, OR GRAVELLY ELASTIC SILT	SILTS AND CLAYS LIQUID LIMIT MORE THAN 50
CH	FAT CLAY OF HIGH PLASTICITY, SANDY FAT CLAY, OR GRAVELLY FAT CLAY	
OH	ORGANIC SILT OR ORGANIC CLAY OF HIGH PLASTICITY	HIGHLY ORGANIC SOILS
PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

NOTE: Fine-grained soils may receive dual classification based upon plasticity characteristics (e.g. CL-ML).

SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	Above 12 in.
COBBLES	3 in. – 12 in.
GRAVEL	No. 4 – 3 in.
Coarse	¾ in. – 3 in.
Fine	No. 4 – ¾ in.
SAND	No. 200 – No. 4
Coarse	No. 10 – No. 4
Medium	No. 40 – No. 10
Fine	No. 200 – No. 40
Fines (Silt or Clay)	Below No. 200

NOTE: Only sizes smaller than three inches are used to classify soils

CONSISTENCY

CLAYS & SILTS	BLOWS PER FOOT
VERY SOFT	0 – 2
SOFT	3 – 4
FIRM	5 – 8
STIFF	9 – 15
VERY STIFF	16 – 30
HARD	OVER 30

RELATIVE DENSITY

SANDS & GRAVELS	BLOWS PER FOOT
VERY LOOSE	0 – 4
LOOSE	5 – 10
MEDIUM DENSE	11 – 30
DENSE	31 – 50
VERY DENSE	OVER 50

NOTE: Number of blows using 140-pound hammer falling 30 inches to drive a 2-inch-OD (1½-inch ID) split-barrel sampler (ASTM D1586).

PLASTICITY OF FINE GRAINED SOILS

PLASTICITY INDEX	TERM
0	NON-PLASTIC
1 – 7	LOW
8 – 20	MEDIUM
Over 20	HIGH

DEFINITION OF WATER CONTENT

DRY
SLIGHTLY DAMP
DAMP
MOIST
WET
SATURATED



METHOD OF CLASSIFICATION

PLATE

A-2

The number shown in "BORING NO." or "TEST PIT NO." refers to the approximate location of the same number indicated on the "Boring and Test Pit Location Diagram" as positioned in the field by pacing or measurement from property lines and/or existing features, or through the use of Global Positioning System (GPS) devices. The accuracy of GPS devices is somewhat variable.

"DRILLING TYPE" refers to the exploratory equipment used in the boring wherein HSA = hollow stem auger, and the dimension presented is the outside diameter of the HSA used.

"EQUIPMENT TYPE" refers to the equipment used in the excavation of the test pit, and may include the width of the bucket on the excavator and the use of "rock" teeth or attachments.

"N" in "BLOW COUNTS" refers to a 2-in. outside diameter split-barrel sampler driven into the ground with a 140 lb. drop-hammer dropped 30 in. repeatedly until a penetration of 18 in. is achieved or until refusal. The number of blows, or "blow count", of the hammer is recorded for each of three 6-in. increments totaling 18 in. The number of blows required for advancing the sampler for the last 12 in. (2nd and 3rd increments) is defined as the Standard Penetration Test (SPT) "N"-Value. Refusal to penetration is considered more than 50 blows for a 6-inch increment. (Ref. ASTM D1586).

If,

N = a whole # e.g. "15", it represents the SPT blow counts for the last 12 inches.

N = stacked numbers e.g., 5/10/20, it represents the blow counts for each 6 inches increment.

"R" in "BLOW COUNTS" refers to a 3-in. outside diameter ring-lined split spoon sampler driven into the ground with a 140 lb. drop-hammer dropped 30 inches repeatedly until a penetration of 12 inches is achieved or until refusal. The number of blows required to advance the sampler 12 inches is defined as the "R" blow count. The "R" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows for a 6-inch increment. (Ref. ASTM D3550).

If,

R = a whole # e.g. "15", it represents the unconverted blow counts for 12 inches.

For refusal (penetration less than 12 inches), R=a whole #/X" e.g., 50/10"

"CS" in "BLOWS/FT." refers to a 2½-in. outside diameter California style split-barrel sampler, lined with brass sleeves, driven into the ground with a 140-pound hammer dropped 30 inches repeatedly until a penetration of 18 inches is achieved or until refusal. The number of blows of the hammer is recorded for each of the three 6-inch increments totaling 18 inches. The number of blows required for advancing the sampler for the last 12 inches (2nd and 3rd increments) is defined as the "CS" blow count. The "CS" blow count requires an engineered conversion to an equivalent SPT N-Value. Refusal to penetration is considered more than 50 blows for a 6-inch increment. (Ref. ASTM D3550)

"SAMPLE TYPE" refers to the form of sample recovery, in which N = Split-barrel sample, R = Ring-lined sample, CS = California style split-barrel sample, G = Grab sample, B = Bucket sample, C = Core sample (ex. diamond-bit rock coring), S = Shelby Tube.

"DRY DENSITY (LBS/CU FT)" refers to the laboratory-determined dry density in pounds per cubic foot. The symbol "NR" indicates that no sample was recovered.

"WATER (MOISTURE) CONTENT (% OF DRY WT.)" refers to the laboratory-determined water content in percent using the standard test method ASTM D2216.

"USCS" refers to the "Unified Soil Classification System" Group Symbol for the soil type as defined by ASTM D2487 and D2488. The soils were classified visually in the field, and where appropriate, classifications were modified by visual examination of samples in the laboratory and/or by appropriate tests.

These notes and boring logs are intended for use in conjunction with the purposes of our services defined in the text. Boring log data should not be construed as part of the construction plans nor as defining construction conditions.

Boring logs depict our interpretations of subsurface conditions at the locations and on the date(s) noted. Variations in subsurface conditions and characteristics may occur between borings. Groundwater levels may fluctuate due to seasonal variations and other factors.


The stratification lines shown on the boring logs represent our interpretation of the approximate boundary between soil or rock types based upon visual field classification at the boring location. The transition between materials is approximate and may be more or less gradual than indicated.



BORING & TEST PIT LOG NOTES

PLATE


A-3

Project: BATHTUB ROW Project Number: 32-223627-0	BORING NO. 1	 Western Technologies <small>An RMA Company</small>
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Date(s) Drilled: 3/12/2024	Logged By: S. O'HERRON-ALEX	Checked By: A. KABA
Drilling Method: HOLLOW STEM AUGER	Drill Bit Size/Type: 7"	Total Depth of Borehole: 5
Drill Rig Type: CME 75	Drilling Contractor: ENVIRO-DRILL	Approximate Surface Elevation: NOT DETERMINED
Groundwater Level and Date Measured: NO GROUNDWATER ENCOUNTERED	Sampling Method(s): GRAB, SPT	Hammer Data: 140-LB AUTOHAMMER
Borehole Backfill: AUGER CUTTINGS	Location: SEE LOCATION DIAGRAM	

Depth (feet)	WATER CONTENT	DRY DENSITY (LBS/CU FT)	SAMPLE TYPE	SAMPLE	BLOW COUNTS	USCS	GRAPHIC LOG	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0						Asphalt		3.5" Asphalt, 4" Base Course	
						CL-ML		Silty CLAY with Sand; brown, moist	
12.2				G					
5								BORING TERMINATED AT 5 FEET	
10									
15									

PLATE A-4


Project: BATHTUB ROW Project Number: 32-223627-0	BORING NO. 2	 Western Technologies <small>An RMA Company</small>
--	---------------------	---

Date(s) Drilled: 3/12/2024	Logged By: S. O'HERRON-ALEX	Checked By: A. KABA
Drilling Method: HOLLOW STEM AUGER	Drill Bit Size/Type: 7"	Total Depth of Borehole: 10
Drill Rig Type: CME 75	Drilling Contractor: ENVIRO-DRILL	Approximate Surface Elevation: NOT DETERMINED
Groundwater Level and Date Measured: NO GROUNDWATER ENCOUNTERED	Sampling Method(s): GRAB, SPT	Hammer Data: 140-LB AUTOHAMMER
Borehole Backfill: AUGER CUTTINGS	Location: SEE LOCATION DIAGRAM	

Depth (feet)	WATER CONTENT	DRY DENSITY (LBS/CU FT)	SAMPLE TYPE	SAMPLE	BLOW COUNTS	USCS	GRAPHIC LOG	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0						Asphalt		4" Asphalt, 3.5", Base Course	
18.3				G		CL		Lean CLAY with Sand; dark brown, stiff, moist	
				N	4 5 7				
5				G					
				N	6 7 7				
10								BORING TERMINATED AT 10 FEET	
15									

S:\2024\32-223627-0-COUNTY BATHTUB ROW RECONSTRUCTION\LOGS\log14.mxd

PLATE A-5


Project: BATHTUB ROW Project Number: 32-223627-0	BORING NO. 3	 Western Technologies <small>An RMA Company</small>
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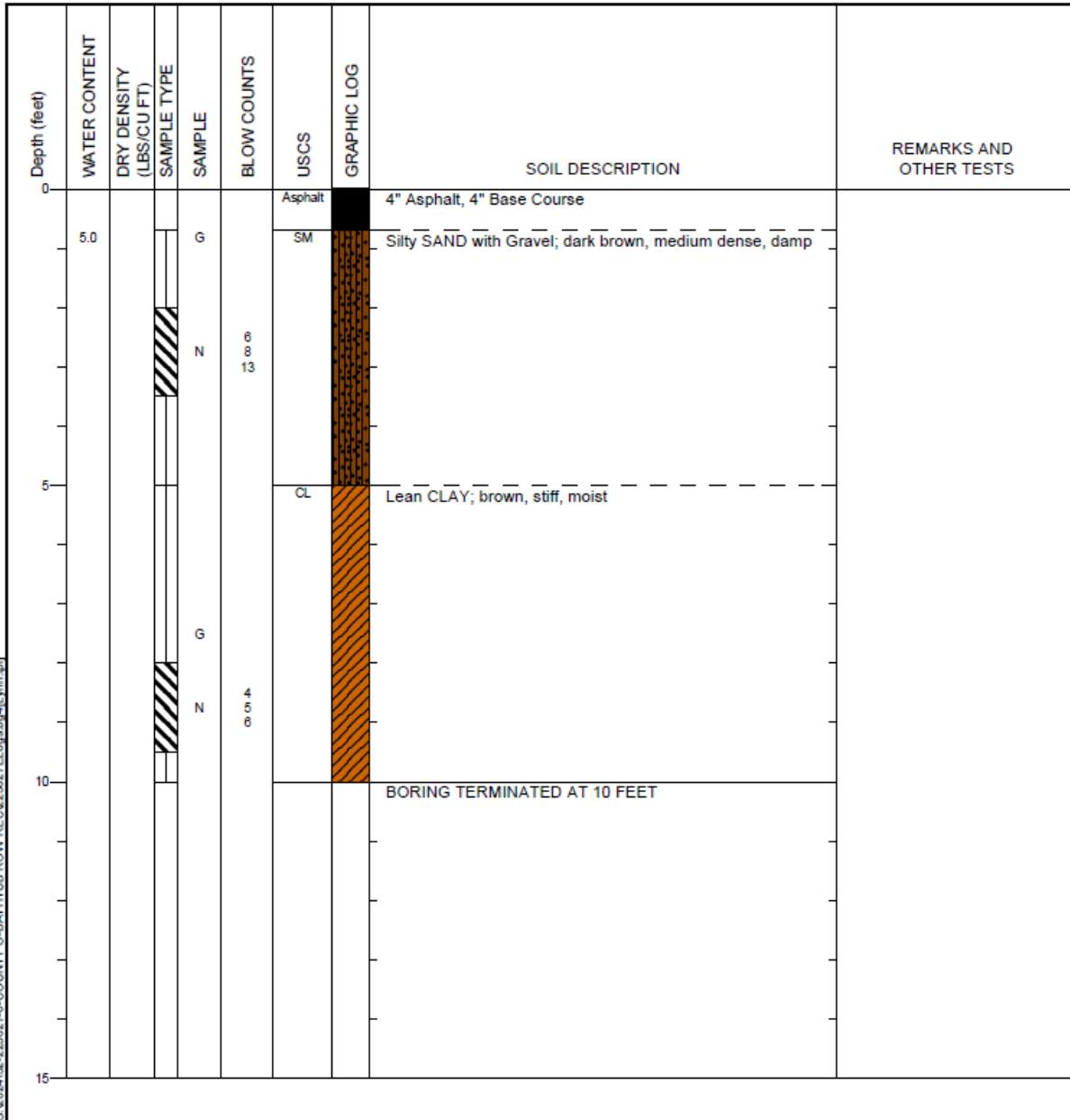
Date(s) Drilled: 3/12/2024	Logged By: S. O'HERRON-ALEX	Checked By: A. KABA
Drilling Method: HOLLOW STEM AUGER	Drill Bit Size/Type: 7"	Total Depth of Borehole: 5
Drill Rig Type: CME 75	Drilling Contractor: ENVIRO-DRILL	Approximate Surface Elevation: NOT DETERMINED
Groundwater Level and Date Measured: NO GROUNDWATER ENCOUNTERED	Sampling Method(s): GRAB, SPT	Hammer Data: 140-LB AUTOHAMMER
Borehole Backfill: AUGER CUTTINGS	Location: SEE LOCATION DIAGRAM	

Depth (feet)	WATER CONTENT	DRY DENSITY (LBS/CU FT)	SAMPLE TYPE	SAMPLE	BLOW COUNTS	USCS	GRAPHIC LOG	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0						Asphalt		3.5" Asphalt, 4" Base Course	
						CL		Lean CLAY; dark brown, moist	
5				G				BORING TERMINATED AT 5 FEET	
10									
15									

S:\2024\32-223627-0-COUNTY 0-BATHTUB ROW REC\223627\Blogs\log41.yml.pdf

PLATE A-6

Project: BATHTUB ROW Project Number: 32-223627-0		BORING NO. 4			
Date(s) Drilled: 3/12/2024		Logged By: S. O'HERRON-ALEX		Checked By: A. KABA	
Drilling Method: HOLLOW STEM AUGER		Drill Bit Size/Type: 7"		Total Depth of Borehole: 10	
Drill Rig Type: CME 75		Drilling Contractor: ENVIRO-DRILL		Approximate Surface Elevation: NOT DETERMINED	
Groundwater Level and Date Measured: NO GROUNDWATER ENCOUNTERED		Sampling Method(s): GRAB, SPT		Hammer Data: 140-LB AUTOHAMMER	
Borehole Backfill: AUGER CUTTINGS		Location: SEE LOCATION DIAGRAM			



G:\024\32-223627-0-COUNTY O-BATHTUB ROW REC\223627Elogs\by4[Lynn.pj]

PLATE A-7

SOIL PROPERTIES																			
Boring No.	Depth (ft.)	Soil Class	Particle Size Distribution - (%) Passing by Weight														Plasticity		Remarks
			1¼"	1"	¾"	½"	3/8"	#4	#8	#10	#16	#30	#40	#50	#100	#200	LL	PI	
1	0-5	CL-ML A-4 (3)	-	-	-	-	100	99	98	97	95	91	90	89	86	79	24	7	
2	0-5	CL A-4 (6)	-	-	-	-	100	99	98	98	96	92	91	89	87	79	27	10	
4	0-5	SM A-1-b (0)	-	-	100	98	95	85	70	68	56	43	36	30	23	21	NV	NP	

Note: NP = Non-Plastic
Samples obtained excluded cobbles and boulders.

	PROJECT: BATHTUB ROW JOB NO.: 32-223627-0	PLATE B-1
	SOIL PROPERTIES	



8305 Washington Place, N.E.
Albuquerque, New Mexico 87113
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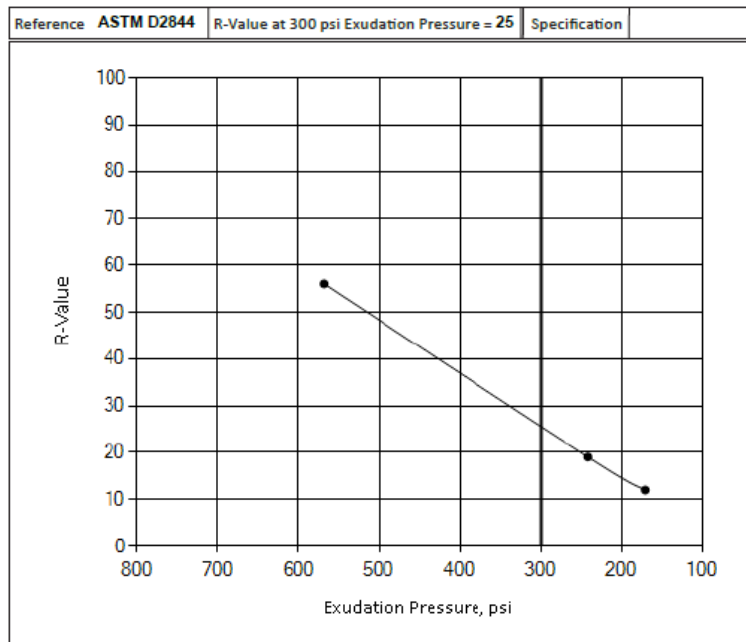
Resistance R-Value and Expansion Pressure of Compacted Soils

Client **COUNTY OF LOS ALAMOS**
P.O. BOX 30
LOS ALAMOS, NM 87544

Date of Report **03/27/24**
Job No. **32-223627-0**
Event No. _____ Lab No. **51209**
Authorized By _____ Date _____
Sample Location Designated By _____ Date _____
Sampled By _____ Date **03/18/24**
Submitted By _____ Date **03/27/24**

Project **BATHTUB ROW RECONSTRUCTION**
Project Address **BATHTUB ROW AND PEACH STREET, LOS ALAMOS, N**
Material Description _____
Material Use _____
Material Source **BORING 1 (0-5')**
Sample Location _____

Sieve Analysis Finer than No. 200		
Sieve Size	Accumulative Passing, %	Specification
6 in.		
3 in.		
2 in.		
1-1/2 in.		
1 in.		
3/4 in.		
1/2 in.		
3/8 in.		
1/4 in.		
No. 4		
No. 8		
No. 10		
No. 16		
No. 30		
No. 40		
No. 50		
No. 100		
No. 200		



Liquid Limit, Plastic Limit & Plasticity Index		
	Result	Specification
Preparation Method		
Processing Method		
Liquid Limit		
Plastic Limit		
Plasticity Index		
Group Symbol		
Name		

Specimen	1	2	3
Moisture at Compaction, %	13.5	12.1	10.7
Dry Density, lbf/ft ³	120.0	122.1	120.7
Compactor Pressure, psi	25	75	275
Exudation Pressure, psi	171	241	568
Expansion Pressure, psf	0	4	0
Corrected R-Value	12	19	56

Comments:

THE SERVICES REFERRED TO HEREIN WERE PERFORMED IN ACCORDANCE WITH THE STANDARD OF CARE PRACTICED LOCALLY FOR THE REFERENCED METHOD(S) AND RELATE ONLY TO THE CONDITION(S) OR SAMPLE(S) TESTED AT THE TIME AND PLACE STATED HEREIN. WESTERN TECHNOLOGIES INC. (WT) MAKES NO OTHER WARRANTY OR REPRESENTATION, EXPRESSED OR IMPLIED, AND HAS NOT CONFIRMED INFORMATION INCLUDING SOURCE OF MATERIALS SUBMITTED BY OTHERS. THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE PRIOR WRITTEN APPROVAL OF WT.

3.3.4 SPECIAL PROVISIONS FOR HOT MIX ASPHALT

SPECIAL PROVISIONS

FOR

SECTION 423 HOT MIX ASPHALT (HMA)

(August 2021 – Not to be used on Federally Funded Projects)

The special provision shall supersede the section 423 of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction:

423.1 DESCRIPTION

This Work consists of constructing one (1) or more pavement courses of Hot-Mix Asphalt (HMA) on a prepared base, to include crushing, stockpiling, hauling, binder, mineral admixture, mix design, mixing, providing cold feeds, process control testing and placement.

423.2 MATERIALS

423.2.1 General

HMA is a mixture of asphalt binder, aggregate, blending sand, mineral filler, and mineral admixture. Unless otherwise prohibited in the Contract, the County will allow Recycled Asphalt Pavement (RAP) in HMA mixtures as long as the resulting mixture conforms to all Specification requirements. The Contractor shall size, uniformly grade, and combine aggregate fractions in accordance with the Contract. The Contractor shall test Materials in accordance with applicable AASHTO/ASTM methods, as modified by the County or other test procedures as directed by the County. The Project Manager will decide all questions pertaining to the interpretation of test procedures.

423.2.2 Aggregate

The Contractor shall ensure the aggregate gradation of the HMA mixture meets the requirements of Table 540 .2.2.1:1, "HMA Aggregate Gradation Control Points." of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction. The Project Manager may require, at no additional cost to the County, wet preparation, per AASHTO T 146, Method A, if the Project Manager determines there are Deleterious Materials present in the aggregate stockpiles before aggregate gradation testing. The Contract will specify the type of HMA the Contractor is to use. The County will allow the Contractor to combine Materials from two (2) or more sources to produce aggregate only when each individual aggregate source meets all applicable quality requirements

423.2.2.1.1 Aggregate Quality

For each Material source, the Contractor shall ensure the HMA coarse aggregate has an AI of 25 or less when calculated in accordance with Section 901, "QUALITY CONTROL/QUALITY ASSURANCE (QC/QA)."

The Contractor shall regulate the crushing of aggregate to:

1. Minimum Fractured Faces content of the plus No. 4 Material complies with the requirements of Table 423.2.2.1.2:1, "Fractured Faces, Sand Equivalent, and Fine Aggregate Angularity," of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction and evaluation by AASHTO 335-09, "Fractured Face Determination for Coarse Aggregate;"
2. Ensure the combined plus 3/8 inch material contains no more than 20% flat, elongated particles with a dimensional ratio of 3:1 or greater as determined by ASTM D 4791 (TTCP Modified);
3. Ensure the combined Material, excluding RAP; passing the No. 40 sieve is non-plastic;
4. Ensure that before the addition of mineral admixtures, the minimum sand equivalent value and the minimum fine aggregate angularity value of the combined aggregate, excluding RAP, complies with the requirements of Table 423.2.2.1.2:1, "Fractured Faces, Sand Equivalent, and Fine Aggregate Angularity," of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction and
5. Determine the Sand Equivalent value in accordance with AASTHO T 176, Alternate Method No. 1, and Fine Aggregate Angularity value in accordance with AASHTO T 304, Method A.

423.2.2.1.2 Fractured Faces

The County will consider a face to be fractured when at least one-half of the projected particle area exhibits a rough, angular, or broken texture with well-defined edges.

423.2.2.2 Production

When producing aggregates for HMA, the Contractor shall:

1. Remove natural fines by screening and stockpiling separately;
2. Use a No. 4 screen, minimum, or a larger screen if needed to properly control the crushing and screening operation;
3. Crush the aggregate retained on the scalping screen and separate the crushed Material into at least two (2) stockpiles of fine and coarse aggregates; and
4. Regulate crushing operations to produce Material that meets design requirements when combined.

423.2.2.3 Stockpiling

The following requirements apply to stockpiles, the Contractor shall:

1. Place stockpiles upon prepared sites;
2. Make stockpiles neat and regular to prevent segregation;
3. Provide enough storage space for each size of aggregate;
4. Separate the aggregate stockpiles far enough apart to prevent mixing, or with walls or partitions;
5. Prevent contamination (store stockpiles away from vehicular and Equipment traffic);
6. Keep the storage yard neat and orderly and keep the stockpiles accessible for sampling; and
7. Keep the aggregate sizes separated until delivered to the cold feed system that feeds the drier.

423.2.2.4 Combining

When combining crushed Materials from different stockpiles, including RAP (if in the mixture); the Contractor shall ensure the product is in accordance with the mix design gradation requirements. The Contractor shall use controlled feeders from each stockpile to combine crushed Material.

423.2.3 Asphalt Binder

The Contract will specify the type and grade of asphalt binder. The Contractor shall provide asphalt binders in accordance with Section 402, "Asphalt Materials and Mineral Admixtures." The Contractor shall not change the asphalt source after approval of the mix design without written approval of the State Materials Bureau.

423.2.4 Mineral Admixtures

The Contractor shall provide mineral admixtures in accordance with Section 402, "Asphalt Materials and Mineral Admixtures."

423.2.5 Blending Sand

Blending sand consists of the following:

1. Natural fines from the scalping process;
2. Concrete sand;
3. Sandy Material; or
4. A combination of these, graded to the mix design requirements.

The Contractor shall determine the need for and percentage (a maximum of 20.0%) of blending sand using mix design tests on samples taken from stockpiles during crushing operations and submitted to an approved testing Laboratory.

423.2.6 Mineral Filler

The Contractor shall, if required by mix design, provide mineral filler in accordance with AASHTO M 17 and approved by the NMDOT State Materials Bureau. Fly ash as a mineral filler for HMA is not allowed.

423.2.7 Reclaimed Asphalt Pavement (RAP)

Unless otherwise specified in the Contract, the Contractor may use RAP removed under the Contract consisting of salvaged, milled, pulverized, broken, or crushed asphalt pavement. The Contractor may use RAP produced from outside sources provided the following is met: after the Contractor obtains sufficient quantities of RAP aggregate samples in accordance with AASHTO T 308; the County will Accept RAP for which the coarse aggregate has a percent wear of 40.0 or less, at 500 revolutions, when tested in accordance with AASHTO T 96. The Contractor shall provide plus No. 4 RAP Material with a minimum of 75% Fractured Faces content (one (1) face). The County will make no additional payment for the asphalt binder in the RAP or asphalt binder due to asphalt binder grade adjustment.

The Contractor may use a maximum of 15% RAP (by weight) in the production of HMA mixtures without changing the asphalt binder.

For quantities greater than 15% and up to 25% RAP, the Contractor shall:

1. Either lower the asphalt binder's high and low temperature grades by one (1) grade (e.g. lower a PG 76-22 to a PG 70-28); or
2. Extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A, ensuring the resultant binder meets the entire AASHTO M 320 (excluding direct tension) required Project PG asphalt binder properties indicated on the approved mix design.

For quantities greater than 25% and up to 35% RAP, the Contractor shall:

1. Extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A; and
2. Ensure the resultant binder meets the entire AASHTO M 320 (excluding direct tension) required Project PG asphalt binder properties indicated on the approved mix design.

The County will not allow the Contractor to use more than 35% RAP in the production of HMA mixtures.

For Projects of entirely new construction, the Contractor shall:

1. Limit the RAP to 15% in the top mat or extract, recover and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M323, Appendix A; and
2. Ensure the resultant binder meets the entire AASHTO M320 (excluding direct tension) required Project PG asphalt binder properties indicated on the approved mix design.

If Plus Grades of PG asphalt binder is specified on the project, for quantities greater than 15% RAP, the Contractor shall extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A. The Contractor shall ensure the Section 423: Hot Mix Asphalt (HMA) (Major Paving) Page 214 resultant binder meets the entire AASHTO M 320 required Project PG asphalt binder properties indicated on the approved mix design including the additional Plus Grade requirements for Elastic Recovery and Solubility.

The Contractor shall:

1. Process RAP so that 100% passes a 1-1/2-inch sieve;
2. Maintain adequate stockpile management (i.e. sufficient quantities and shaping of the stockpiles);
3. Address in the Quality Control Plan how RAP will be controlled, such as which screen will be used to split into two (2) stockpiles, or by what method the RAP will be controlled to keep the resultant mix within Acceptable limits;
4. Account for the weight of the binder in the RAP when batching aggregates;
5. Provide RAP that is free of Deleterious Materials; and
6. Perform process control testing in accordance with Section 901, "Quality Control/Quality Assurance (QC/QA)" and Table 901.5:3, "Minimum Process Control Guidelines for Aggregates, Base Course, and RAP (QC)," as RAP is produced and prepared for inclusion in the HMA.

If problems with HMA consistency or compliance with Project Specifications occur, additional efforts taken to achieve Acceptable levels of consistency and compliance with Contract Specifications, at the Contractor's discretion (at no additional cost to the County), include, but are not limited to:

1. Reduce the top size of the RAP from 1-1/2 inch to one (1) inch;
2. Fractionate the aggregates on a second screen, such as the 3/8 inch or 1/4 inch Screen so that the RAP is maintained in three (3) stockpiles, one being RAP larger than 1-1/2 inch to two (2) inches, Coarse RAP and the third being Fine RAP;
3. Ensure that the RAP used in the HMA mix design is representative of the RAP available on the Project;
4. Cover the RAP pile(s) so that ambient moisture is not absorbed; and
5. Process and maintain the stockpiles so that the RAP Material is equally and uniformly distributed throughout the entire stockpile(s) and is withdrawn such that uniform, non-segregated RAP is delivered to the hoppers

423.2.8 Mix Design

The Contractor shall provide a mix design developed by a NMDOT approved testing Laboratory, reviewed and signed by a professional Engineer licensed by the New Mexico Board of Registration for Professional Engineers and Land Surveyors. A list of approved private testing laboratories is available from the NMDOT State Materials Bureau. The Contractor shall develop the mix design at no additional cost to the County. The Contractor may develop the mix design at any time prior to the Project Pre-Construction meeting.

The Contractor shall provide to the Project Manager the mix design developed in accordance with the Contract documents and AASHTO R35 as modified by NMDOT for review and concurrence. The Contractor shall summarize the mix design results from the NMDOT approved testing Laboratory. County concurrence of a mix design will not relieve the Contractor of full responsibility for producing an Acceptable mixture. The mix design may require adjustment in accordance with Section 423.2.9, "Job Mix Formula.

The County will require a minimum of one percent (1.0%) for mix designs that include hydrated lime, anhydrite based Material, or Portland cement. The Contractor shall include these mineral admixtures in the gradation for developing the mix design. AASHTO T 354 may be used in lieu of AASHTO T 84/T 85. If lubricating antistripping is used as a mineral admixture, the percent dosage shall be done in accordance with the manufacturer's recommendation and approved by the Contractor's design Lab. Lubricating antistripping shall be approved by the County and included in the most current NMDOT Approved Products List (APL). The mix design shall be in accordance with Table 423.2.8:1, "HMA Superpave Design Requirements for Aggregates with Less Than three percent (3.0%) Absorption," or Table 423.2.8:2, "HMA Superpave Design Requirements for Aggregates with three percent (3.0%) or Greater Absorption" of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction.

The Contractor shall test the HMA in accordance with AASHTO T 283, as indicated below:

1. Use six (6) inch diameter specimens; Compact all test specimens in accordance with AASHTO T 312;
2. Conditioned specimens shall include one (1) freeze thaw cycle;
3. On the AASHTO T283 Section 11.3 scale of zero (0)-five (5), with five (5) exhibiting the most damage from moisture, visually estimate the amount of damage caused by moisture on the interior surfaces of each broken specimen; and
4. The tensile stress ratio shall be a minimum of 85%. The Contractor shall provide a mixture that meets all applicable criteria. If tests indicate the need for additives or modifiers not specified in the Contract or a change in source of binder to satisfy mix design requirements, the Contractor shall perform the required changes at no additional cost to the County.

NMDOT reviewed commercial mix designs are Acceptable for use on Project with the concurrence of the Project Manager The commercial mix design will be submitted for review and concurrence by the Project Manager for conformance with the Contract documents and re-issued with Project information.

An approved mix design is valid up to one (1) year from the date of review. If the Aggregate Index expires within that year, a new Aggregate Index needs to be established in order to keep the mix design valid. The Contractor shall submit a new mix design if changing the source of Materials.

For Projects that are longer than one (1) year and aggregate Materials are produced and stockpiled the mix design and Aggregate Index (AI) may be approved for an extension by the Project Manager.

423.3 CONSTRUCTION REQUIREMENTS

423.3.1 General

The Contractor shall:

1. Provide sufficient storage space for each size of aggregate and RAP;
2. Keep the different sizes separate and ensure that segregation, degradation, or combination of Materials of different aggregate sizes does not occur until delivery to the cold feed system;

3. Re-screen or waste segregated or degraded Material;
4. Provide separate storage and feeder for mineral filler if the Contract requires mineral filler; and
5. If the Project Manager determines that uncoated aggregate exists, the Contractor shall take corrective action.

423.3.2 Mix and Laydown Temperature Requirements

The Contractor shall not allow the temperature of the HMA discharged from the mixer into the transport vehicle to be greater or less than ten percent (10%) of the target mixing temperature specified in the mix design, not to exceed 350° F, unless written concurrence by the asphalt binder supplier and design lab are provided to the Project Manager.

HMA delivered to the Project with mix temperatures outside the acceptable laydown temperature range as specified in the mix design shall, at the sole discretion of the Project Manager, be removed and replaced at no cost to the County.

423.3.3 Addition of Mineral Admixtures

The Contractor shall:

1. Monitor the out feed of the mineral admixture with sensors that provide audible and visual signals to control the out feed with an accuracy of \pm three percent (3.0 %) by weight;
2. Control the mineral admixture content such that it meets the range specified in the approved mix design;
3. Add the mineral admixture to the aggregate in an enclosed pug mill immediately after leaving the cold feed and just before introduction into the drier drum or aggregate drier; and
4. Minimize the loss of mineral admixture while adding to the aggregate.

When mixing the aggregate and mineral admixture, the Contractor shall maintain the moisture content of the combined aggregate at the recommended moisture content as shown on the approved mix design.

423.3.4 Equipment

423.3.4.1 Mixing Plants

423.3.4.1.1 Plant Scales

The Contractor shall ensure that the scales are accurate to 0.5% of the maximum allowable load in accordance with the Federal Motor Carrier Safety Administration (FMCSA) publication, as certified by a licensed scale technician. The Contractor shall submit a copy of the certification to the Project Manager.

423.3.4.1.2 Storage of Asphalt Binder Materials

The Contractor shall provide storage tanks for asphalt binder capable of holding, heating and circulating the asphalt at the required temperatures and measuring the temperature of the

asphalt in the tank. The Contractor shall allow measuring and sampling of asphalt binder from the delivery trucks upon arrival.

423.3.4.1.3 Feeder for Drier

The Contractor shall equip the plant with an accurate feeding mechanism to deliver the aggregate into the drier and maintain uniform production.

423.3.4.1.4 Drier

The Contractor shall equip the plant with a system to continuously agitate the aggregate during the heating and drying process. The Contractor shall use a drier that can dry and heat the aggregate and prevent fuel oil or carbon from coating the aggregate. The Contractor shall take corrective action if the aggregate becomes coated with burner fuel.

423.3.4.1.5 Bins

The Contractor shall equip the plant with storage bins large enough to supply the mixer when it is operating at full capacity and arrange the bins to ensure separate and adequate storage of the appropriate aggregate sizes. The Contractor shall equip the bins with warning devices that notify the control panel when the bins are low.

423.3.4.1.6 Asphalt Binder Control Unit

The Contractor shall equip the plant with a scale or meter to control the rate of flow to determine the amount of asphalt binder added to the mix.

423.3.4.1.7 Thermometers

The Contractor shall equip the discharge chute of the drier with a recording thermometer to register the temperature of the heated aggregates or mix. The Contractor shall provide the Project Manager with a record of discharge temperatures at the end of each week's production or as requested by the Project Manager.

423.3.4.1.8 Truck Scales

The Contractor shall weigh the HMA on approved plant or truck scales provided by the Contractor or public scales in accordance with Section 109.1, "Measurement of Quantity."

423.3.4.1.9 Requirements for Batching Plants

423.3.4.1.9.1 Weigh Box or Hopper

The Contractor shall provide a batching plant that can accurately weigh aggregate in a weigh box or hopper suspended on scales. The Contractor shall use a weigh box or hopper that can hold a full batch. The Contractor shall ensure that the gate of the weigh box or hopper does not allow Material to leak into the mixer while being weighed. The Contractor shall test the scales in accordance with Section 109.1, "Measurement of Quantity."

423.3.4.1.9.2 Mixer

The Contractor shall provide a batch mixer with a capacity of at least 2,000 lb, capable of producing a uniform mixture within specified tolerances.

423.3.4.1.9.3 Control of Mixing Time

The Contractor shall equip the mixer with an accurate timing device that signals the end of the mixing time.

423.3.4.1.10 Drum Mix Plants

The Contractor shall equip the drum mix plant with the following auxiliary Equipment and capabilities:

1. Separate cold feed controls for each Material;
2. An automatic interlocking device for cold feed, asphalt, and mineral admixtures;
3. A means for controlling moisture content of aggregate. A means for sampling individual cold feeds and provisions for sequential sampling of aggregate, RAP, asphalt binder, and mineral admixtures;
4. Equip the bins with mechanical or electrical devices that provide an audible or visual warning when the bins are less than 1/4 full;
5. Bins shall be designed and equipped to prevent segregation;
6. Equip the bin containing fine aggregate and filler, if required, with a device that prevents Material hang-up during plant operation;
7. A minimum of one (1) cold feed bin for each aggregate size in the mix;
8. Equip the cold feed with mechanical or electrical devices that indicate with an audible or visual warning when the cold feed belt is not carrying the proper amount of Material;
9. A separate cold feed for RAP Material. Introduce RAP so that it does not come into direct contact with the burner flame; and
10. Couple the asphalt feed control with the total-aggregate-weight measurement device to automatically vary the asphalt feed rate to maintain the required proportion.

423.3.4.2 Haul Equipment

The Contractor shall haul asphalt mixtures with trucks that are tarped and have tight, clean, smooth metal beds and a thin coat (a minimal amount) of a County approved release agent in accordance with Section 423.3.4.2.1, "Asphalt Release Agent (ARA)."

423.3.4.2.1 Asphalt Release Agent (ARA)

The Contractor shall use Asphalt Release Agents (ARA) for prevention of asphalt mixtures adhering to haul trucks and any other type of Equipment that is used for asphalt paving operations. ARA shall meet the requirements of Table 423.3.4.2.1:1, "Asphalt Release Agent Properties" of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway

and Bridge Construction. All testing will be in accordance with NTPEP Evaluation of Asphalt Release Agents AASHTO ARA 14

423.3.4.3 Pavers

The Contractor shall use self-contained, self-propelled pavers, with activated screeds or strike-off assemblies, heated if necessary, and capable of spreading and finishing courses of HMA in accordance with the Plans.

423.3.4.4 Compaction Equipment

The Contractor shall provide a sufficient number, weight, and type of rollers to obtain the required compaction and specified pavement density while the HMA is in a workable condition. All rollers must be capable of reversing direction without shoving or tearing the mixture.

423.3.5 Placement Operations

For cold milled surfaces, the Contractor shall prepare the surface in accordance with Section 414, "Cold Milling." The Contractor shall clean the existing surfaces and apply a tack coat as required in the Plans or at an application rate as approved by the Project Manager in accordance with Section 407, "Tack Coat."

The Contractor shall place HMA on prepared Base Course in accordance with Section 303, "Base Course." The Contractor shall apply prime coat as required in the Plans or at an application rate as approved by the Project Manager in accordance with Section 408, "Prime Coat."

The Contractor shall place the HMA on the Accepted surface, spread and compact to specified width, lift thickness, and cross slope in accordance with the Plans.

Materials Transfer Vehicle (MTV): The Contractor shall use a MTV with storage and remixing capabilities on all mainline construction that utilizes greater than 25% RAP when placing HMA State approved designs. The MTV will independently remix and deliver mixture from the hauling Equipment to the paving Equipment.

The Contractor shall furnish an MTV with the following capabilities:

1. An unloading system to receive mixtures from the hauling Equipment;
2. A minimum storage capacity of 13 tons with a remixing system in the MTV storage bin;
3. A discharge conveyor to deliver the mixture to the paver hopper; and
4. The MTV system cannot exceed maximum legal loading on Structures.

Pick-up machines, hopper inserts and Material transfer devices are not considered MTVs.

In the event the MTV malfunctions during paving operations, the Contractor can finish the Day without the MTV. The Contractor shall not resume further mainline mix placement until the MTV is operational.

Consistently overloading the HMA mix into the paving machine is not Acceptable. The Contractor shall coordinate the speed of the paving machine with the production of the plant and keep enough haul Equipment available to achieve continuous operation.

The Contractor shall use the control system on the paving machine to control the grade and the transverse slope by either of the following methods:

1. One end directly and the other indirectly through controlling the transverse slope; or
2. Each end independently, including screed attachments.

The Contractor shall suspend operations if the control system does not achieve the typical section in accordance with the Plans. The Contractor shall place, spread, and finish the courses of HMA according to the following:

1. Without segregation or tearing;
2. True to the line, grade, and crown in accordance with the Plans; and
3. With self-propelled pavers, except as otherwise directed.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing Equipment impracticable, the Contractor shall dump, spread, and level the HMA by other methods to achieve the required compacted thickness.

423.3.5.1 Weather Limitations

The Contractor shall not place HMA on wet or frozen surfaces or if weather conditions prevent proper handling, finishing, and compacting. The Contractor shall place HMA when the Chill Factor is at least 40 °F and rising. If the air temperature is 60 °F or warmer do not consider the Chill Factor.

423.3.5.2 Compaction

The Contractor shall:

1. Compact the HMA thoroughly and uniformly immediately after placement. Operate rollers at speeds slow enough to minimize displacement of the HMA, including the lines and grades of the asphalt edges. Remove marks from pneumatic rollers;
2. Prevent the HMA from sticking to the roller wheels by keeping the wheels moistened with water; water mixed with very small quantities of detergent or other approved Material. Do not use diesel fuel or other petroleum diluents;
3. At locations inaccessible to the rollers, the Contractor shall compact the HMA with hot hand tampers, smoothing irons, or mechanical tampers;
4. Use a trench roller or cleated compression strips under the roller to transmit compression to depressed areas; and
5. Remove areas that become loose, broken, mixed with dirt, segregated or defective, replace with fresh HMA, and compact to match the surrounding area, at no additional cost to the County.

423.3.5.3 Joints

The Contractor shall off set longitudinal joints at least six (6) inches relative to the longitudinal joints of the underlying course.

Unless otherwise specified, the Contractor shall taper transverse and longitudinal joints as follows:

1. At least a three (3) ft taper for transverse joints, with a taper slope no steeper than 24:1;
2. At least a one (1) ft taper or a notched taper, for longitudinal joints, with a taper slope no steeper than 6:1 or a notched taper with a one (1) inch vertical edge at the top of the taper connected to a slope no steeper than 6:1;
3. Cut and square off transverse tapers before commencing new Work;
4. Clean and tack coat longitudinal joints from previous operations; and
5. Avoid placing longitudinal joints in the wheel paths, unless approved by the Project Manager.

The Contractor shall completely bond joints and provide smooth surface for each course at the joints. The County will not allow deviations greater than 3/16 inch when tested with a ten (10) ft straightedge in any direction. When paving under traffic, the Contractor shall schedule the daily surfacing operations so that tapered longitudinal joints are not exposed for longer than seven (7) Days.

423.3.5.4 Surface Tolerances

The Contractor shall provide a final HMA surfacing course that conforms to Section 401, "Pavement Smoothness Measurement.

423.3.5.5 Plan Surfacing Thickness

The Contractor shall:

1. Place pavement at the thickness specified in the Contract;
2. Monitor thickness by calculating continuous production yields using the formula found in the MT-1, as maintained by the NMDOT State Materials Bureau;
3. Calculate the required yield and the corresponding yields for 0.25 inch increase (upper limit) and decrease (lower limit). The Project Manager may adjust the required yield to fit field conditions. If adjusted, the new target yield will be communicated to the Contractor in writing;
4. Control production to keep yield within the upper and lower limits;
5. Correct deficiencies at no cost to the County;
6. Correct deficient depths during placement; and
7. Address Plan Surfacing thickness in the Quality Control Plan.

423.3.6 Sampling and Testing

The Contractor shall sample and test in accordance with Section 901, "Quality Control Quality Assurance General Provisions," and Special Provision for Section 906 Minimum Testing Requirements. The County will sample and test in accordance with Section 901, "Quality Control /Quality Assurance General Provisions," and Special Provision for Section 906 Minimum Testing Requirements.

A Quality Control/Assurance asphalt concrete material field sample shall be taken in accordance with the requirements of ASTM D979 for each job mix delivered. The materials shall be sampled at the greater rate of either one sample for each 500 tons, or one sample per

day, for each type of material placed on a project, as directed by the Project Manager. The sample shall be of such size to provide material for all tests specified and a split sample to perform verification/referee tests for gradation and binder content, if required.

423.3.6.1 CONTRACTOR QUALITY CONTROL FOR COMPACTION

The Contractor shall:

1. Monitor the compaction process by determining the density of the HMA with a portable densometer in accordance with the Plan;
2. Establish calibration of the portable densometer from cut pavement samples;
3. Determine the density readings of the cut pavement samples in accordance with AASHTO T 166 (weight, volume method); determine the density readings of the pavement with the portable densometer and correlate these test results;
4. Conduct Quality Control testing in accordance with Division 900, "QUALITY CRITERIA" and provide test results to the Project Manager;
5. Perform Quality Control density testing while the asphalt mixture is hot enough to permit further compaction;
6. Not roll for compaction when it becomes ineffective or damages the HMA; and
7. Not use vibratory mode when it becomes ineffective or damages the HMA.

The County shall perform Quality Assurance compaction testing in conjunction with contractor.

423.3.6.2 Acceptance

The County will evaluate Materials using Contractor and County test data for Acceptance.

Acceptance Testing Tolerances^a

Characteristic	Specification limit, percentage points from TV
Air Voids, %	± 1.4
Pavement Density % ^c	± 2.5
Mineral Admixture% ^e	Minimum of JMF Target Value
Voids in the Mineral Aggregate (VMA), % ^{a,d}	± 1.6
Asphalt Content % ^{a,b}	± 0.50

^a All gradation, Asphalt Content, VMA, and VFA values shall be determined using the AASHTO T 308 testing results.

^b HMA will not be rejected based on Asphalt Content Determined by AASHTO T 308.

^c Density payment will be adjusted in accordance with Section 901.3.11, “QLA.”

^d If Gmm fluctuates more than ±0.03 on a consistent basis, it is recommended that the Specific Gravity of the aggregates be checked in order to verify VMA.

^e If Mineral Admixture is below Design TV cease hot mix production, investigate and correct.

423.3.6.2.1 Acceptance of Pavement Density

The target density for Acceptance of HMA will be 94.50% of the theoretical maximum density as determined from AASHTO T 209. For determination of maximum specific gravity, the Contractor shall obtain and test a minimum of two (2) samples and ensure the County obtains and tests a minimum of one (1) sample for each Day that the HMA is placed. Each individual density test value obtained less than 92.0% or more than 97.0% of the theoretical maximum density will be evaluated in accordance with Section 423.3.6.3.2, “Adherence to Specifications and Rejection of Non-specification Material.”

For purposes of Acceptance and pay factor determination:

1. Determine the density from cut pavement sections (cores) with six (6) inch diameters extending through the full thickness of the HMA;
2. Determine the pay factor in accordance with Section 904, “Quality Level Analysis;”
3. To be prepared for dispute resolution, the Contractor shall provide one (1) additional core for each core tested by the County for Acceptance of density in accordance with section 423.3.7, “Dispute Resolution;” and
4. If a composite pay factor of more than one (1.00) is calculated, the composite pay factor will be a one (1.00) for the purposes of payment.

423.3.6.2.2 Adherence to Specifications and Rejection of Non-Specification Material

The Contractor shall produce Material in substantial compliance with all Specification requirements. The County will evaluate Air Voids, Pavement Density, Void in Mineral Aggregate (VMA), and Asphalt Content test results for Specification compliance. Evaluation of Material that does not meet Specifications will be in accordance with the following:

Individual Test Results.

If an individual test is outside the Specification limits but is less than two (2) standard deviations from the mean of previously produced Material of the current lot, investigate and

propose corrective actions but production may continue and the result will be entered into QLA. If an individual test result (for the current lot) is outside the Specification limits and is two (2) or more standard deviations from the mean of previously produced Material, the Contractor shall cease production, investigate the causes of the failure, and propose corrective actions. The Contractor shall not resume production until the proposed corrections are approved by the Project Manager.

Consecutive Test Results.

If two (2) consecutive test results of the same property (for the current lot) are outside the Specification limits, cease production, investigate the causes of the failure, and propose corrective action. The Contractor shall not resume production until the proposed corrections are Accepted by the Project Manager in writing. Limit production to a maximum of 1,000 tons, production will include a minimum of two (2) Contractor tests and one (1) County test. If testing indicates that the problem has been corrected, the Contractor shall resume full operations. If the problem has not been corrected, the Contractor shall perform further trial runs and testing.

Pavement Density Below 90.000%.

All pavement density tests that are below 90.000% are rejected and the Contractor shall remove and replace all Material represented by the test with Specification Material at the Contractors expense. The Contactor shall submit a Plan in writing for approval by the Project Manager that determines the limits of Material to be removed within 48 hours of reporting a Quality Control test or receiving a Quality Assurance test for pavement density below 90.000% density. If the test below 90.000% is a County test, the County will obtain a new test from the Material replaced by the Contractor to replace the density test reported by the County. If the test below 90.000% is a Contractor test, the Contractor shall obtain a new test from the Material replaced by the Contractor to replace the test reported by the Contractor. The test obtained from the replaced Material will be input into the QLA to replace the test below 90.000%. All Material that is rejected, at the sole discretion of the County, shall be removed and replaced with Specification Material at the Contractor’s expense. If the Material is allowed to remain in place by the County all random, sample data will be entered into QLA, this does not apply to pavement density below 90.000% that shall be removed and replaced. Sampling for corrective action will not be entered into QLA.

The Project Manager may reject Material that appears to be defective based on visual inspection.

423.4 METHOD OF MEASUREMENT

If the County measures HMA by the square yard, the County will use the average width of the HMA in place and the length from station to station along the centerline of the Roadway when calculating quantities.

423.5 BASIS OF PAYMENT

<u>Pay Item</u>	<u>Pay Unit</u>
HMA Complete	Ton or Square Yard
HMA	Ton or Square Yard

The County will pay for Accepted quantities at the Bid Item Unit Price. Providing and transporting all cores, samples and storage containers shall be Incidental to the Pay Items above.

423.5.1 Work Included in Payment

The County will consider as included in the payment for the pay item(s) listed in this section and will not measure or pay separately for the following Work:

1. Asphalt binder, aggregate, blending sand, mineral filler, mineral admixture, and WMA additive or process as appropriate;
2. Mixing, hauling, placement, and compaction of HMA or WMA;
3. Quality Control in accordance with Section 902, "Quality Control;"
4. Providing and transporting all cores for correlation;
5. Providing Mix Design in accordance with Section 423.2.8, "Mix Design;" and
6. Providing storage container for samples and cores if referee testing is used.

3.3.5 SPECIAL PROVISIONS FOR MINIMUM TESTING REQUIREMENTS

SPECIAL PROVISIONS

FOR

SECTION 906 MINIMUM TESTING REQUIREMENTS (MTR's)

(August 2021 – Not to be used on Federally Funded Projects)

The special provision shall supersede section 906 of the 2019 Edition of New Mexico Department of Transportation Standard Specification for Highway and Bridge Construction:

906.1 DESCRIPTION

906.1.1 General

This Work consists of Minimum Testing Requirement's (MTR's) for the County and Contractor which includes construction sampling, tests, and testing frequencies of Materials incorporated into the Work for Acceptance and Quality Control.

906.1.2 Minimum Testing Requirements

Earthwork				
ITEM	Test Required	Sampling/Testing Location	Minimum Testing Frequency	NMDOT Requirements (Revised, Same)
Embankment, Unclassified Excavation and Borrow	Moisture/Density Tests (Proctor), Soils Classification	Roadway	1 per material type	Same
	In-Place Density and Moisture	Roadway	1/500 cy	Revised
Natural Ground (NMDOT Standard Spec. Section 203.3.5.1)	Moisture/Density Tests (Proctor), Soils Classification	Roadway	1 per material type	Same
	In-Place Density and Moisture	Roadway	1/500lf per 2 lane Roadway	Revised
Surfacing Required (NMDOT Standard Spec. Section 203)	Estimated "R" Value	Top 2 feet of Roadway	1/500lf per 2 lane Roadway	Revised
Foundations/Backfill for Culverts and Minor Structures	In-Place Density and Moisture	Structure	See Table A	See Table A
	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
	Gradation		1/300cy	Same
Subgrade Preparation	Moisture/Density Tests (Proctor), Soils Classification	Roadway	1 per material type	Same
	In-Place Density and Moisture		1/500lf/lane	Revised

Backfill for Major Structures	In-Place Density and Moisture	Structure	See Table A	See Table A
	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
	Gradation		1/300cy	Same
Backfill for Mechanical Stabilized Earth (MSE) Retaining Structures (NMDOT Standard Spec. Section 506)	In-Place Density and Moisture	Structure	See Table A	See Table A
	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
	Gradation, PI		1/300cy	Same
Foundations for Slope and Erosion Protection Structures (NMDOT Standard Spec. Section 602)	In-Place Density and Moisture	Structure	1 per 25sy	Same
	Moisture/Density Tests (Proctor), Soils Classification	Foundation Material location	1 per material type	Same
Foundations For Sidewalks, Drive pads, and Concrete Median Paving (NMDOT Standard Spec. Section 608)	In-Place Density and Moisture	Roadway	1/500lf and at least 1 per day	Revised
	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
Bed Course Material for Sidewalks, Drive Pads, and Concrete Median Paving (NMDOT Standard Spec. Section 608)	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
	In-Place Density and Moisture	Roadway	1/500lf and at least 1 per day	Revised
Foundations For Curb and Gutter (NMDOT Standard Spec. Section 609)	In-Place Density and Moisture	Roadway	1/500lf and at least 1 per day	Same
	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same
Bed Course For Curb and Gutter (NMDOT Standard Spec. Section 609)	In-Place Density and Moisture	Stockpile	1 per material type	Same
	Moisture/Density Tests (Proctor), Soils Classification	Roadway	1/500lf and at least 1 per day	Same
Foundations/Backfill for Drop Inlets and Junction Boxes (NMDOT Standard Spec. Section 623)	In-Place Density and Moisture	Structure	See Table A	See Table A
	Moisture/Density Tests (Proctor), Soils Classification	Foundation Material location	1 per material type	Same
Base Course				
ITEM	Test Required	Sampling/Testing Location	Minimum Testing Frequency	
Base Course	In-Place Density and Moisture	Roadway	1/500ft/lift	Revised
*if the percent passing the No. 10 sieve is less than 10% of AASHTO T-27 test procedure,	Moisture/Density Tests (Proctor), Soils Classification	Stockpile	1 per material type	Same

than this test does not need to be performed.	Gradation	Processed Material	1 per source and 1 per 1000 tons of placement	Revised
	FF, LL*, PI*	Processed Material	1 per source and 1 per 1000 tons of placement	Revised
	Thickness	Roadway after Compaction	1/500ft/lane	Revised
Asphalt				
ITEM	Test Required	Sampling/Testing Location	Minimum Testing Frequency	
Pavement	Asphalt Content	Roadway	1/500 tons/lift, with a minimum of 1 per day's run	Revised
	Air Voids, Roadway Compaction (Cores)	Roadway after Compaction	1 per days run or as required by the County Inspector	Revised
	Roadway Compaction (Nuclear Densometer)	Roadway after Compaction	1 per 500ft/lane	Revised
	Gradation, FF, PI, SE, F&E, FAA, Moisture	Cold Feed before addition of lime or Anhydrite material	1/segment	Revised
Performance Graded Asphalt Binder	The manufactures certificate of compliance will suffice for testing credits	From storage tank of injection line to the plant	1 per binder type per project	Revised
Portland Cement Concrete				
ITEM	Test Required	Sampling/Testing Location	Minimum Testing Frequency	
Fine Aggregates	Gradation	Stockpile	1/100cy	Revised
	SE, FM		2 per project	Revised
Course Aggregates	Gradation	Stockpile	1/100cy	Revised
	FF, F&E		2 per project	Revised
Non-Shrink Mortar Aggregate	Gradation	Stockpile	1/10 cy	Revised
Project Acceptance Test	Compressive Strength Cylinders	See Table B	1 set (4) of cylinders from one of the first three trucks, minimum of 1 per day	Same
	Slump, Unit Weight, Air Content, Temperature		1 per first three trucks, then 1 within the next 6 trucks,	Same

			minimum of 1 per day	

Table 906.1.2:14

Method of Placement	Sample Location
Pumped	Point of discharge from pump into Structure
Direct Discharge from Truck	At end of discharge chute of truck
Crane and Bucket	From discharge chute of bucket
Conveyor belt	From Material on Roadway after being discharged from conveyor
Slip Form (Curb and Gutter/Barrier Walls)	Point of discharge into extrusion machine
Slip Form Paver (PCCP)	From grade in front of paving machine
Drill Shafts	At end of discharge chute of truck

Table 906.1.2:15

Tolerances for Comparison of Independent Assurance Sample Tests to Acceptance and Process Control Tests

Characteristics	Tolerances
Moisture/Density Test (Proctor)	± 3.0 PCF*, ± 2 Units for Moisture
In Place Moisture/Density (Roadway)	± 3.0 PCF, ± 2 Units for Moisture
Plasticity Index (P.I.)	± 3 Units
*Only if proctors are run by both District and Project. If proctors are not run by both District and Project ± 5.0 PCF.	

Gradation	Tolerances
1 1/2" to 3/4"	± 6 Units
1/2" to No. 4	± 5 Units
No. 8 through No. 200	± 4 Units
Fractured Faces	± 5 Units
Flat & Elongated	± 5 Units
Fine Aggregate Angula	± 3 Units
Sand Equivalent	± 4 Units
Aggregate Specific Gra	± 0.020

Concrete	Tolerances
Slump	± 0.5 Inch
Unit Weight	± 2.0 PCF
Compressive Strength	10% or less = Range / Average x 100%

Hot Mix Asphalt (HMA)/Warm Mix Asphalt (WMA)	Tolerances
Roadway Density (Cores from Project, retained by Agency and Contractor Personnel)	± 0.025 Units
Density (Nuclear)	± 4 Units
VMA	± 1.0 Units
Asphalt Content (Ignition Burn Oven)	± 0.50
Bulk Specific Gravity at Ndes	± 0.025 Units
Maximum Specific Gravity	± 0.020 Units
Air Voids	± 1.5 Units

**Los Alamos County Public Works
Minimum Testing Requirements**

**Table A
Structure Definitions, Foundation and Backfill Requirements**

1. Transverse or skewed culvert or concrete box culvert (CBC) not connected to an underground drainage network, including end sections, wing walls if backfilled simultaneously, structural plate, pipe, storm drains and sewer lines¹:

Foundation: One density per 200 linear feet. For pipe in a batter, up to 4 pipes may be considered as a unit for purposes of foundation density. ³

Backfill Density: 1 per 1 foot of fill per side* and to top of trench per 200 linear feet. ²

*For a battery of pipes, the number of backfill densities required will be as follows:

One-half (1/2) of the required densities for up to 4 pipes. ⁴

One-third (1/3) of the required densities for more than 4 pipes. ⁴

2. End section of CBC wing wall if backfilled separately from culvert pipe or CBC²:

Backfill Density: 1 per 1 foot of fill per side. ³

3. Drop Inlet (DI), junction box, cattle guard, light and signal base, manhole, etc.:

Foundation: 1 per structure⁴

Backfill Density: 1 per 1 foot of fill³

4. Underground drainage network including interruptions such as DI, manhole, junction box, plug service connection, slotted drain, etc., if backfilled simultaneously:

Foundation: 1 per structure⁴

Backfill Density: 1 per 1 foot of fill³

5. Retaining Wall/MSE wall:

Foundation: One foundation density per 50 linear feet. ³

Backfill Density: 1 per 1 foot of fill per 50 linear feet. ³

6. Bridge abutment back wall, wing wall or approach slab.

Backfill Density: 1 per 6 inches of fill⁴

7. Pier Footing:

Foundation: 1 per footing⁴

Backfill Density: 1 per 6 inches of fill⁴

Notes:

1. All extensions will be considered increments and as such structure units.
2. Determination of backfill Depths Governing Minimum Testing Criteria Requirements:
 - a. When backfill construction is performed in trench conditions, the depth of compacted backfill to be tested shall be measured from the foundation to the top of the trench.
 - b. When backfill construction is performed in non-trench conditions, the depth of compacted backfill to be tested shall be determined through the use of the appropriate NMDOT standard drawings unless where Los Alamos County Utilities Specifications would apply.
3. Revised from NMDOT minimum testing requirements
4. Same testing requirements as NMDOT Minimum Testing Requirements

Table B

<u>Method of Placement</u>	<u>Sample Location</u>
Pumped	Point of Discharge from pump into structure
Direct Discharge from Truck	At end of discharge chute of truck
Crane and Bucket	From discharge chute of bucket
Conveyor belt	From material on roadway after being discharged from conveyor
Slip Form (C&G, Sidewalk, CWB, etc.)	Point of discharge into extrusion machine
Slip For Paver (PCCP)	From Grade in front of paving machine

3.3.6 UTILITY SPECIFICATION

TABLE OF CONTENTS

IFB 24-74 BATHTUB ROAD RECONSTRUCTION PROJECT

<u>SPECIFICATION SECTION</u>	<u>TITLE / DESCRIPTION</u>
100	Measurement and Payment
101	General Requirements
102	Submittal Requirements
103	Compliance Requirements
104	Underground Facilities Staking Requirements
202	Excavation, Trenching & Backfill
501	Sanitary Sewer Systems
502	Sewer Manholes
503	Polyethylene Pipe for Sewer and Non-Potable Systems
504	Sewer Flow Control
601	Water Systems
701	Cast In Place Concrete
702	Grout



SECTION 100 UTILITIES MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Measurement and payment for Los Alamos County utility bid Items are specified in this Section.
- B. Work to be performed under this contract will be paid for on a Unit Price or Per Unit basis under the appropriate Bid Items in this Measure and Payment Section. All costs for Work shown on Drawings or described in Specifications, as incidental to the Contract shall be included in the Contract Price. A claim by the Contractor for extra compensation for an item shown on the Drawings or described in the Specifications will not be considered for any reason, including but not limited to the claim that it does not fall within the scope of one of the Bid Items. All utility work for Facilities owned by Los Alamos County shall comply with the Los Alamos County Utility Standard Specifications and shall be paid as outlined in this Section, NOT as indicated in the NMDOT Standard Specifications.
- C. Contractor shall submit a schedule of values for all bid items listed in this section totaling the bid cost of utility work. This schedule of values will be the basis of progress payments.
- D. General scope of work under each bid item includes all labor and materials required for construction of completely functional and operational facilities as shown on the Drawings and Specifications.
- E. GENERAL. The total base bid price shall cover all work required by the contract documents for construction of a completely functional and operational facility. All costs in connection with the proper and successful completion of the work, including furnishing all materials, equipment, supplies, appurtenances; providing all construction plans, equipment, and tools; and performing all necessary labor and supervision to fully complete the work in accordance with these contract documents shall be included in the unit and lump sum prices bid. All work not specifically set forth as a pay item in the bid proposal shall be considered a subsidiary obligation of Contractor and as such, all cost in connection therewith shall be included in the bid prices.
- F. ESTIMATED QUANTITIES. All estimated quantities for unit price items stipulated in the bid proposal are approximate and are to be used only (a) as a basis for estimating the probable cost of the work and (b) for the purpose of comparing the bids submitted for the work. The actual amounts of the work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished at the unit price bid.
- G. INSTALLATION OF LINES AND CONNECTION TO LINES. Trench location shown on plans may change based on actual location of existing utilities and structures. All descriptions of connections to existing lines are based on available information. Field verifications of connections are required and changes in fittings and locations for connections may be required. No additional cost will be

allowed for changes in fittings from those designated unless the work is significantly more difficult. No additional costs will be allowed for working near or installing under or over utilities or structures that are accurately located on the ground in accordance with New Mexico Excavation Law.

- H. MEASUREMENT AND PAYMENT. All measurements and payments will be based on completed work performed in strict accordance with the Drawings and Specifications and in accordance with the contract-unit prices and schedule values. Incidental work and items not listed in the contract-unit price schedule will not be paid for separately but will be included in the payment for the listed item or items to which the incidental work applies. Measurement and payment for lump sum items shall be full compensation for all labor, equipment, materials, testing, and incidentals necessary to perform the work in accordance with these contract documents and shall include all else incidental thereto for which separate payment is not provided under other items.

Item No. 1 - 14" Ductile Iron Waterline By Trenching

Shall include all labor, materials, equipment, and incidentals required for installation of 14" Ductile Iron water pipe by trenching up to 5' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 2 - 14" Ductile Iron Waterline By Trenching 6' to 9'

Shall include all labor, materials, equipment, and incidentals required for installation of 14" Ductile Iron water pipe by trenching between 6' to 9' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 3 - Owner Furnished 14" Ductile Iron Waterline By Trenching

Shall include all labor, materials (except pipe), equipment, and incidentals required for installation of 14" Ductile Iron water pipe by trenching up to 5' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials (except pipe), equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Owner shall provide 14" pipe. Payment shall be on a Linear Foot basis.

Item No. 4 - Owner Furnished 14" Ductile Iron Waterline By Trenching 6' to 9'

Shall include all labor, materials (except pipe), equipment, and incidentals required for installation of 14" Ductile Iron water pipe by trenching between 6' to 9' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials (except pipe), equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Owner shall provide 14" pipe. Payment shall be on a Linear Foot basis.

Item No. 5 - 12" C900 PVC Waterline By Trenching

Shall include all labor, materials, equipment, and incidentals required for installation of 12" PVC Iron water pipe by trenching up to 6' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials

and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 6 - 8" C900 PVC Waterline By Trenching

Shall include all labor, materials, equipment, and incidentals required for installation of 8" PVC water pipe by trenching up to 6' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 7 - 6" C900 PVC Waterline By Trenching

Shall include all labor, materials, equipment, and incidentals required for installation of 6" PVC water pipe by trenching up to 6' bury, including bedding, backfill, joint restraint, locate wire, warning tape, and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 8 - 6" DIP Waterline By Trenching (Fire Hydrant Legs)

Shall include all labor, materials, equipment, and incidentals required for installation of 6" Ductile Iron water pipe by trenching up to 6' bury, including bedding, backfill, joint restraint, locate wire, warning tape, DIP poly wrap and fittings as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 9 - 14" Ductile Iron Water Gate Valves with Valve Box

Shall include all labor, materials, equipment, and incidentals required for installation of a new 14" ductile iron gate valve, with valve boxes, covers, concrete collars, locate wire and appurtenances including trenching, bedding, backfill as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Per Unit basis.

Item No. 10 - 12" Ductile Iron Water Gate Valves with Valve Box

Shall include all labor, materials, equipment, and incidentals required for installation of a new 12" ductile iron gate valve, with valve boxes, covers, concrete collars, locate wire and appurtenances including trenching, bedding, backfill as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Per Unit basis.

Item No. 11 - 8" Ductile Iron Water Gate Valves with Valve Box

Shall include all labor, materials, equipment, and incidentals required for installation of a new 8" ductile iron gate valve, with valve boxes, covers, concrete collars, locate wire and appurtenances including trenching, bedding, backfill as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Per Unit basis.

Item No. 12 - 6" Ductile Iron Water Gate Valves with Valve Box

Shall include all labor, materials, equipment, and incidentals required for installation of a new 6" ductile iron gate valve, with valve boxes, covers, concrete collars, locate wire and appurtenances including trenching, bedding, backfill as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Per Unit basis.

Item No. 13 – Connection to Existing 14” Waterline

Shall include all labor, materials, equipment, and incidentals required for connection of new 14” Ductile pipe to existing 14” Ductile/Steel, ductile iron or cast iron pipe, including fittings, reducers, trenching, bedding, backfill, and joint restraint as specified. The unit price shall include all labor, materials, equipment and incidentals for connections to existing waterlines, setting, jointing, furnishing and installing restrained joints and fittings, coupling, reducers, cleaning and testing as specified, written notification to all residents affected by water system shut-downs related to connections, all coordination with Los Alamos County Utilities Department to deactivate and activate lines and valve shut off coordination. Payment shall be on a Per Unit basis.

Item No. 14 – Connection to Existing 12” Waterline

Shall include all labor, materials, equipment, and incidentals required for connection of new 12” PVC pipe to existing 12” Cast Iron, ductile iron or cast iron pipe, including fittings, reducers, trenching, bedding, backfill, and joint restraint as specified. The unit price shall include all labor, materials, equipment and incidentals for connections to existing waterlines, setting, jointing, furnishing and installing restrained joints and fittings, coupling, reducers, cleaning and testing as specified, written notification to all residents affected by water system shut-downs related to connections, all coordination with Los Alamos County Utilities Department to deactivate and activate lines and valve shut off coordination. Payment shall be on a Per Unit basis.

Item No. 15 – Connection to Existing 6” Waterline or 8” Waterline

Shall include all labor, materials, equipment, and incidentals required for connection of new 8” PVC pipe to existing 6” or 8” PVC, steel or cast iron pipe, including fittings, reducers, trenching, bedding, backfill, and joint restraint as specified. The unit price shall include all labor, materials, equipment and incidentals for connections to existing waterlines, setting, jointing, furnishing and installing restrained joints and fittings, coupling, reducers, cleaning and testing as specified, written notification to all residents affected by water system shut downs related to connections, all coordination with Los Alamos County Utilities Department to deactivate and activate lines and valve shut off coordination. Payment shall be on a Per Unit basis.

Item No. 16 – Connection to Existing 6” Waterline

Shall include all labor, materials, equipment, and incidentals required for connection of new 6” PVC pipe to existing 6” PVC, steel or cast iron pipe, including fittings, reducers, trenching, bedding, backfill, and joint restraint as specified. The unit price shall include all labor, materials, equipment and incidentals for connections to existing waterlines, setting, jointing, furnishing and installing restrained joints and fittings, coupling, reducers, cleaning and testing as specified, written notification to all residents affected by water system shut downs related to connections, all coordination with Los Alamos County Utilities Department to deactivate and activate lines and valve shut off coordination. Payment shall be on a Per Unit basis.

Item No. 17 – Install New Fire Hydrant Assembly with Valve and Box

Shall include all labor, materials, equipment, and incidentals required for installation of fire hydrant and fittings, couplings, reducers, trenching, bedding, backfill, and appurtenances and removal of existing fire hydrant as shown on Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for installation, placing screened gravel where required, connections, setting, jointing, furnishing and installing restrained joints and fittings, coupling, reducers, cleaning and testing and removal of as required. Payment shall be on a Per Unit basis.

Item No. 18 – New Single PEX 2” Water Service with Box

Shall include all labor, materials, equipment, and incidentals required for installing new 2” single service per Standard Detail 6006 and transfer existing service line to new meter can. Including service saddle, corporation stop, 2” service line, fittings, warning tape, locate wire, 36” polyethylene meter can, 36” cast iron cover w/single touch read hole, 12” thick insulation pad, 2” service valve, service valve box, single straight-line inlet and outlet meter yoke, abandonment of existing water service line, removal of old water meter can, backfill and compaction at abandoned water meter can. Construct new 2” service pipe from new meter can to intercept existing service

line, connection to existing service line including all labor and fittings. The unit price shall include all labor, materials, equipment and incidentals for service line testing, trenching, bedding, backfill, and compaction. Payment shall be on a Per Unit basis.

Item No. 19 – New Single PEX 2” Water Service

Shall include all labor, materials, equipment, and incidentals required for installing new 2” single service per Standard Detail 6006. Including service saddle, 2” corporation stop, 2” PEX service line, warning tape, locate wire, 2” service valve, service valve box with cast iron lid, connection to existing service line including all labor and fittings. The unit price shall include all labor, materials, equipment and incidentals for service line testing, trenching, bedding, backfill, and compaction. Payment shall be on a Per Unit basis.

Item No. 20 – New Single PEX 1” Water Service with Box

Shall include all labor, materials, equipment, and incidentals required for installing new 1” single service per Standard Detail 6003 and transfer existing service line to new meter can. Including service saddle, corporation stop, 1” service line, fittings, warning tape, locate wire, 36” polyethylene meter can, 36” cast iron cover w/single touch read hole, 12” thick insulation pad, single straight-line inlet and outlet meter yoke, abandonment of existing water service line, removal of old water meter can, backfill and compaction at abandoned water meter can. Construct new 1” service pipe from new meter can to intercept existing service line, connection to existing service line including all labor and fittings. The unit price shall include all labor, materials, equipment and incidentals for service line testing, trenching, bedding, backfill, and compaction. Payment shall be on a Per Unit basis.

Item No. 21 – New Single PEX 1” Water Service

Shall include all labor, materials, equipment, and incidentals required for installing new 1” single service per Standard Detail 6003. Including service saddle, corporation stop, 1” PEX service line, warning tape, locate wire, connection to existing service line including all labor and fittings. The unit price shall include all labor, materials, equipment and incidentals for service line testing, trenching, bedding, backfill, and compaction. Payment shall be on a Per Unit basis.

Item No. 22 – 1” and 2” ARV and Manhole

Shall include all labor, materials, equipment, and incidentals required for installing new 1” and 2” ARVs per Standard Detail 6012. Including fittings, SCH 80 PVC line, pipe support(s), ARV, 4’ diameter precast concrete manhole, 1” or 2” steel vent, and manhole cover. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Per Unit basis.

Item No. 23 – Retire Replaced Water Line

Shall include all labor, materials, equipment, and incidentals required for retirement of replaced water lines, meter cans, fire hydrants, valves, valve boxes, capping lines to be abandoned and other accessories as shown on Drawings and Specifications. The price shall include all labor, materials, equipment and incidentals for hauling and disposal of materials and testing of materials and equipment as required by specifications and costs associated with the retirement. Payment shall be on a Lump Sum basis.

Item No. 24 – Install 8” HDPE Sewer Line by Trenching (Drawing 11.35)

Shall include all labor, materials, equipment, and incidentals required to install new 8” HDPE pipe as shown on drawing 11.35. The line shall be installed by open trenching. The unit price shall include all labor, materials, equipment and incidentals to replace sewer as shown on Drawings and Specifications. Including excavation, bedding, backfill, warning tape, and site restoration. The unit price shall include sewer flow control required per specification 504 and all incidentals to complete the installation. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire project and costs associated with the installation. Payment shall be on a Linear Foot basis.

Item No. 25 – 4” SCH-40 PVC Sewer Delivery Line

Shall include all labor, materials, equipment, and incidentals required to install new 4” SCH-40 PVC Delivery lines per LACDPU construction standards. The unit price shall include excavation, bedding, backfill, compaction, site restoration, and all incidentals to complete the installation. The unit price shall include all labor, materials, equipment and incidentals for connection to sewer lines, including fittings, couplings, and service saddles. Payment shall be on a Per Unit basis.

Item No. 26 – New 4’ Sewer Manhole

Shall include all labor, materials, equipment, and incidentals required to install a new 4’ diameter manhole. The unit price shall include furnishing and install new manhole as shown on Drawings and Specifications. Include excavation, bedding, backfill, compaction, gravel base, site restoration, cast iron ring/cover, concrete collar and all incidentals to complete the installation. The unit price shall include all labor, materials, equipment and incidentals for hauling of materials and testing of materials and equipment before and/or after installation as required by specifications for entire costs associated with the installation. Payment shall be on a Per Unit Basis.

Item No. 27 – Connection to Existing Manhole

Shall include all labor, materials, equipment, and incidentals required for connection of the new 8” sewer main to the existing manholes at each end as shown on the Drawings and Specifications. The unit price shall include all labor, materials, equipment and incidentals for the disconnection of the existing sewer pipe avoiding damage to the existing manholes. All required repair of damage to existing facilities that remain active, and all coordination with Los Alamos County Utilities Department to deactivate and activate lines coordination, shall be incidental to this pay item. Payment shall be on a Per Unit basis as noted in the Bid Schedule.

Item No. 28 – Retire Existing Sewer Line

Shall include all labor, materials, equipment, and incidentals required for retirement of replaced sewer lines, manholes, cleanouts, capping lines to be abandoned and other accessories as shown on Drawings and Specifications. The price shall include all labor, materials, equipment and incidentals for hauling and disposal of materials and testing of materials and equipment as required by specifications and costs associated with the retirement. Payment shall be on a Lump Sum basis.

Item No. 29 – Sawcut Asphalt & Repairs

Shall include all labor, materials, equipment, and incidentals required for saw cut, repair, and replacement of roadway materials including subgrade, basecourse, and asphalt as defined by General Notes. Work shall meet or exceed NMDOT construction standards per Sheet 2-1, Pavement Detail. The unit price shall include all labor, materials, equipment and incidentals for testing, trenching, bedding, backfill, and compaction. Payment shall be on a Square Yard basis.

Item No. 30 – Rock Excavation

Shall include all labor, materials, equipment, and incidentals required for rock and boulder excavation as defined in the NMDOT Standard Specifications for Highway and Bridge Construction 2019 Edition, Section 203.2.1.1 Rock Excavation. Refer to Subsurface Characterization by BSN Santa Fe / Geolines LLC Dated 9/29/23. Payment for rock is additional to trenching and excavation that is incidental to pipeline and utility infrastructure unit costs. The Department of Public Utilities Project Manager shall confirm rock exists and measure quantities of rock in the field if additional payment for rock will be paid. This unit price also includes all labor, materials, equipment and incidentals for hauling, removal, and disposal of materials not meeting the specified backfill requirements and import of replacement material that meets the backfill specification. Payment shall be on a Cubic Yard basis.

Item No. 31 – Concrete valley gutter replacement

Shall include all labor, materials, equipment, and incidentals required for the replacement of the concrete valley gutters as defined in the NMDOT Standard Specifications for Highway and Bridge Construction 2019 Edition, section 511: concrete structures. Payment shall be on a Square Yard basis.

Item No. 32 – Concrete fillets and laydowns replacements

Shall include all labor, materials, equipment, and incidentals required for the replacement of the concrete fillets and laydowns as defined in the NMDOT Standard Specifications for Highway and Bridge Construction 2019 Edition, section 511: concrete structures. Payment shall be on a Square Yard basis.

END OF SECTION

**SECTION 101
GENERAL REQUIREMENTS**

PART 1 GENERAL

1.1 INCLUDED

- A. Applicable codes, ordinances, rules and regulations, administrative requirements, coordination with Department of Public Utilities (DPU), easements, approved construction drawings, testing, inspection, contractor qualifications and acceptance of public utility infrastructure.

1.2 APPLICABLE CODES, ORDINANCES AND RULES AND REGULATIONS

- A. Department of Public Utilities Rules and Regulation, Revised May 17, 2006
- B. Los Alamos County Code of Ordinances, Chapter 16 Development Code
- C. Los Alamos County Code of Ordinances, Chapter 40 Utilities
- D. New Mexico Administrative Code, Title 14 Housing and Construction
- E. 49 Code of Federal Regulations, Part 191
- F. 49 Code of Federal Regulations, Part 192

1.3 CONTRACTOR QUALIFICATIONS

- A. Licenses: Contractors performing work on new or existing public utility infrastructure shall be licensed by the State New Mexico Construction Industries Department.
 - 1. GF-9 or GF-98: Required for gas, water and sewer work. Electric ductbank, vaults and pull boxes only (no installation or handling of wire, terminating, grounding etc.).
 - 2. EL-1J: Required for electric overhead and underground distribution and transmission lines.
 - 3. Pre approved Operator Qualification Plan and Drug and Alcohol program as applicable.
- B. Specific training, certifications, qualifications, manufacturer certifications listed in the individual specifications required to perform work.

1.4 COORDINATION WITH DEPARTMENT OF PUBLIC UTILITIES (DPU)

- A. Notification: The contractor shall notify all customers and the Department of Public Utilities 4 calendar days in advance of any service disruption due to work performed by the contractor. Contractor shall notify affected customers with a door hanger approved by the DPU.
- B. Permits: A penetration permit issued by the DPU is required for all connections to an existing gas, water and sewer main. The contractor shall complete the permit and coordinate the work with the Engineering Department and the Gas/Water/Sewer

Department at least 48 hours before performing the work. The permit must be signed by the contractor, a representative of the Engineering Department and Gas/Water/Sewer Department 48 hours prior to performing work. If the work will impact or take place on a water transmission line, a representative of the Water Production department must sign the permit.

C. Functions performed by Department of Public Utilities (DPU).

1. Gas

- a. Gas valves shall only be operated by DPU.
- b. Connections to existing gas mains shall be performed by DPU or contractor personnel with applicable Operator Qualifications (OQ) and who are a member of an approved Drug and Alcohol Program in accordance with U.S. Department of Transportation Pipeline Safety Regulations. If approved prior to connection, DPU may directly supervise, with OQ qualified personnel, the contractor personnel making the connections.
- c. DPU will provide materials and install residential service lines upon completion of service request form, approval of plans and payment of applicable fees.
- d. DPU will connect service and install meter only after New Mexico Construction Industries Division inspection and approval is obtained.

2. Water

- a. Water system valves shall only be operated by DPU staff.
- b. Water utility meters will be provided and installed by DPU.

3. Sewer

- a. Service connections to existing sewer mains shall be performed by DPU.

4. Electric

- a. All primary terminations in the distribution system shall be completed by DPU unless otherwise stated in DPU approved plans.
- b. DPU will provide and install electric meters.
- c. DPU will provide materials and install residential service lines upon completion of service request form, approval of plans and payment of applicable fees unless otherwise stated in DPU approved plans.
- d. DPU will connect service only after New Mexico Construction Industries Division inspection and approval is obtained.

1.5 APPROVED CONSTRUCTION DOCUMENTS

- A. Construction drawings must be prepared by a Professional Engineer licensed in the state of New Mexico.

- B. Construction drawings must be approved for construction by the DPU Engineering Department.

1.6 EASEMENTS

- A. All public utility infrastructure shall be constructed in utility easements or right-of-way.
- B. Easements and right-of-way shall be granted and filed in the office of the Los Alamos County Clerk prior to beginning construction.
- C. Prior to construction all easements and right-of-way in which public utility infrastructure will be constructed must be staked by a Professional Surveyor licensed in the state of New Mexico.

1.7 TESTING, INSPECTION AND ACCEPTANCE OF INFRASTRUCTURE

- A. All tests required in the individual sections of these specifications shall be completed by the contractor and at the expense of the contractor. Any infrastructure that fails a test must be corrected and retested until a passing test is achieved. All cost associated with correcting infrastructure that fails testing and all cost of re-testing is the responsibility of the contractor. Documentation of test shall be submitted to DPU.
- B. DPU shall inspect all new public infrastructure. Contractor is responsible for coordinating the inspections with DPU. Improvements that are buried before DPU has inspected shall be exposed for inspection by the contractor and at the expense of the contractor.
- C. Locate wire installed on new public infrastructure shall be verified for continuity as follows:
 - 1. Contractor shall verify continuity with own equipment.
 - 2. When contractor has verified all of tracing wire is continuous, contractor shall make arrangements through Project Manager to have Gas/Water/Sewer Department (GWS) staff verify the continuity of the locate wire.
 - 3. Contractor shall demonstrate continuity, in the presence of DPU staff, by locating all newly installed facilities at all location points (test boxes, valves, hydrants, services, etc.) with own equipment while GWS staff verifies continuity with own equipment and verifies accuracy of as-built drawings.
 - 4. Locations identified where no continuity is found shall be repaired by contractor.
- D. Inspection fees as required by DPU and Regulations Fee Schedule, current version, shall be paid prior to beginning construction.
- E. Acceptance of public infrastructure shall occur as follows:
 - 1. Public utility infrastructure constructed as part of a new development shall be accepted in accordance with Los Alamos County Code of Ordinances, Chapter 16 Development Code, Section 16-238 Acceptance.

2. Public utility infrastructure constructed by a DPU capital improvement project by means of competitive bid shall be accepted when the terms of the construction contract associated with the work have been satisfied.

END OF SECTION

SECTION 102 SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Required submittals.
- B. Submittal procedure.
- C. Definition of submittal types for construction.

1.2 REQUIRED SUBMITTALS

- A. Provide submittals as indicated in each specific specification section.

1.3 SUBMITTAL PROCEDURE

- A. Review submittals prior to transmittal to determine and verify field measurements, field construction criteria, manufacturers' catalog numbers, and conformance of submittals with Contract Documents. To certify compliance with these specifications:
 - 1. Routing Sheet provided in this section shall be attached to all submittals. Form must be completed in its entirety, signed and dated.
- B. For any proposed deviation from the Contract Documents, submit a written request to the Project Manager.
- C. Submit for review to Project Manager the following number of copies of submittals:
 - 1. 2 Copies for Department of Public Utilities use.
 - 2. Additional number of copies for Engineer and or Contractor use as determined by the Engineer/Contractor.
 - 3. A digital file (Adobe PDF) may be submitted if the Engineer and County agree. Separate or non-affiliated items shall be submitted as separate digital files.
- D. Submittal Clarity:
 - 1. Contractors Submittal No. on the routing sheet shall be a successive numbering system.
 - 2. Drawings shall be clear and legible.
 - 3. Manufacturer's Literature: Submit a minimum of one original of all manufacturers' printed material. Remaining number of submittals may be reproductions. Reproductions of original material shall be clear and legible.
- E. A partial submittal consists of only a portion of the total required for a project. This is acceptable when it is prudent to submit for review certain submittals before the remaining submittals are available. Submit all items concurrently for which,

due to coordination concerns, a simultaneous review is required. Include a separate Routing Sheet indicating the submittals transmitted with each numbered submittal package.

- F. After review of the submittal package the "Action Code" will be indicated on the Routing Sheet and returned to the Contractor. Review of submittals will be indicated on each Routing Sheet by appropriate signature, stamp, and date. The number of copies of each submittal noted above for Los Alamos County use will be retained and the balance will be returned to the Contractor. The Contractor shall allow a minimum of 10 calendar days for return of submittals.
- G. The Department of Public Utilities will utilize the following "Action Codes" to indicate the status of submittals resulting from the review, and the action required of the Contractor.
 - 1. A - Reviewed. No comments.
 - 2. B – Reviewed And Noted. Make corrections noted. Resubmission not required.
 - 3. C – Reviewed And Not Accepted. Revise and resubmit.
- H. Use a Routing Sheet with all resubmittals indicating each item's submittal number and type suffixed "R1" for the first resubmittal, "R2" for the second resubmittal, and so forth.
- I. Do not fabricate products or begin Work that requires submittals before such submittals are approved.

1.4 DEFINITIONS OF SUBMITTAL TYPES FOR CONSTRUCTION

- A. Calculations: The methods and results of calculations in documented form where specified.
- B. Catalog Data: Standard printed information on materials, products and systems, which shows performance characteristics, dimensions, material of fabrication, and other characteristics necessary to assure conformity with the design requirements. Where other items or information not related to the work of this project are included in the literature submitted, the item(s) and/or information applicable to this project shall be clearly marked.
- C. Certifications: A written statement, signed by a qualified party, attesting that items or services are in accordance with specified requirements. Typically, this written statement is accompanied by additional information to substantiate the statement.
- D. Installation Instructions: Manufacturer's instructions, step-by-step if necessary, showing the field installation of parts, components, equipment, and other similar items.
- E. Material List/Parts List/Design Mixes: A list of system or material components.
- F. Performance Data/Curves: Performance data and/or curves for the proposed equipment to show compliance with contract documents.
- G. Samples/Colors: Samples, including colors, of proposed materials.
- H. Shop Drawings: Drawings necessary to show fabrication details to ensure compliance with contract documents.
- I. Test Reports: Results of specified test requirements.

- J. Wiring Diagrams: Drawings showing the point-to-point wiring of a piece of equipment or between pieces of equipment in a system.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION



**CONTRACTOR SUBMITTAL ROUTING SHEET
DEPARTMENT OF PUBLIC UTILITIES**

PROJECT:	Contractor's Submittal No.:
	Date:
	Product Description:
CONTRACTOR:	Dates of any previous submissions:
Supplier:	Manufacturer:
Specification No.:	Drawing Nos.:
Are there any deviations to the contract documents? <input type="checkbox"/> No <input type="checkbox"/> Yes (explain and identify)	
<p>CONTRACTOR'S CERTIFICATION: This submittal has been reviewed by the Contractor in compliance with the CONTRACT DOCUMENTS. Any deviations to the CONTRACT DOCUMENTS are identified above. If this is a resubmittal, any changes other than those specifically called for by the PROJECT MANAGER on previous submittals are specifically identified on the sheet(s) directly following this form.</p> <p align="center">Signed: _____ Date: _____</p>	
LOS ALAMOS COUNTY ACTION	
Date Received:	No. Copies Received:
Date Returned:	No. Copies Returned:
A	<p>REVIEWED for general conformity with DRAWINGS and SPECIFICATIONS. No comments, approved for construction.</p> <p>By: _____ Date: _____</p>
B	<p>REVIEWED AND NOTED for general conformity with DRAWINGS and SPECIFICATIONS. Make corrections as noted, resubmittal not required.</p> <p>By: _____ Date: _____</p>
C	<p>REVIEWED AND NOT ACCEPTED. Not in conformity with DRAWINGS and SPECIFICATIONS. Revise and resubmit.</p> <p>By: _____ Date: _____</p>
PROJECT MANAGER'S COMMENTS, IF ANY:	

**SECTION 103
COMPLIANCE REQUIREMENTS**

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Erosion and Sediment Control
- B. Site Stabilization
- C. Spill Control and Response
- D. Debris Control
- E. Dust Suppression
- F. Traffic Control

1.2 QUALITY ASSURANCE

- A. Submit per Section 102 Submittal Procedures, manufacturer's data, materials certifications, certified seed mix, Storm Water Pollution Prevention Plan (SWPPP), erosion and sediment control best management practices, traffic control plans and applicable appurtenances to complete work in this section.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 EROSION AND SEDIMENT CONTROL

- A. General Requirements
 - 1. Contractor shall supply, install and maintain all erosion and sediment control measures, stabilization and structural controls, and other protective measures through the use of Best Management Practices (BMPs) including silt fences, straw bales, compost socks, or other approved methods, prior to any earth disturbing activity. Standard Details, Section 7000 contains drawings for installation of BMPs.
 - 2. Maintain BMPs in accordance with manufacturer's recommendations.
 - 3. Disturb only the minimum amount of soil necessary. Contractor shall take suitable precautions to protect existing trees, shrubs and other natural vegetation during construction. Project Manager must approve any trees to be removed.
- B. Projects Where Soil Disturbance Is Greater Than One Acre (SWPPP Required)
 - 1. All provisions in subsection 3.1, A. General Requirements stated above apply.
 - 2. Contractor shall prepare for review and acceptance by Project Manager a Storm Water Pollution Prevention Plan (SWPPP) in compliance with all requirements set by Environmental Protection Agency (EPA) National Pollution Discharge Elimination System for projects where soil disturbance is greater than one acre.

3. Contractor and County, as co-operators, shall each submit a Notice of Intent to the EPA Storm Water Notice Processing Center (<http://cfpub.epa.gov/npdes/stormwater/enoi.cfm>).
4. Contractor shall manage the SWPPP by supplying and installing all erosion and sediment control measures, stabilization and structural controls, and other protective measures through the use of Best Management Practices (BMPs) including silt fences, straw bales, compost socks, or other approved methods, prior to any earth disturbing activity.
5. Contractor shall conduct and document storm water inspections, maintain a soil disturbance log during construction and maintain records as required by EPA. Inspections shall be documented on the attached form provided on pages 5 and 6 of this section.
6. Contractor shall amend the SWPPP as required by EPA.
7. Contractor shall submit a Notice of Termination (NOT) following project completion and final stabilization, as defined by the EPA, is achieved.

3.2 SITE STABILIZATION

- A. Contractor shall stabilize all disturbed areas with native perennial vegetation. Do not leave any disturbed areas as barren soil. After reseeding contractor shall provide and install degradable rolled erosion control product perpendicular to slope to provide long term erosion control without active maintenance.
- B. Final stabilization shall be accepted by Project Manager.
- C. Seeding application shall be per New Mexico State Highway and Transportation Standard Specifications for Highway and Bridge Construction 2000 Edition, Section 632 or latest. Seeding class shall be Class B.
- D. Seed mix shall be from commercial supplier and be certified to be free of invasive species. Seed mix shall be delivered to site in a sealed packaging labeled with mix design from supplier. Seed mix as follows:

SEED MIX FOR ELEVATIONS 6,900 TO 7,500 FEET

SPECIES SCIENTIFIC NAME	SPECIES COMMON NAME	LBS SEED/ ACRE
Bouteloua Gracilis	Blue Gramma	3.0
Bromus Carinatus Var. Polyanthus	Foothills Brome	3.0
Elymus Trachycaulus	Slender Wheatgrass	4.5
Anropogon Gerardii	Big Bluestem	4.5
	Total	15.0

SEED MIX FOR ELEVATIONS 6,000 TO 6,900 FEET

SPECIES SCIENTIFIC NAME	SPECIES COMMON NAME	LBS SEED/ ACRE
Bouteloua Gracilis	Blue Gramma	4.5
Bouteloua Curtipendula	Sideoats Gramma	3.0
Pleuraphis Jamesii	Galleta	3.0
Schizachyrium Scoparium	Little Bluestem	4.5

		Total	15.0
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3.3 SPILL CONTROL AND RESPONSE

- A. In the event of a spill, contractor shall immediately notify all regulatory agencies having authority and the Los Alamos Project Manager. The Contractor shall be responsible for remediation of any spill and notifying all required agencies in compliance with all local, state and federal laws.
- B. Store all fuels, lubricants, chemical storage, material stockpiles, and other potential pollutants in a designated area on-site. Provide secondary containment and controls including berming lined with an impervious material, covering, or other appropriate BMPs.

3.4 DEBRIS CONTROL & DISPOSAL

- A. Use good housekeeping practices to keep sites free of construction debris and trash. Provide containers for deposit of debris and trash. Contractor is responsible for disposing of all waste materials generated from the construction including materials demolished, unsuitable excavated debris and construction debris. All materials shall be disposed in a lawful manner.
- B. Do not drive or move any vehicle on any public road unless the vehicle is constructed, loaded, secured or covered in a manner that will prevent any of its load from dropping, shifting, leaking, or otherwise escaping.
- C. Securely fasten all load covers to vehicles prior to driving on public roads so that the covering does not come loose or become a hazard to others.
- D. Do not bury construction waste, sanitary waste, or trash on-site.
- E. Concrete truck washout area shall be approved by Project Manager. If necessary, special provisions shall made by contractor if needed to protect property and the environment.

3.5 DUST SUPPRESSION

- A. Contractor is responsible for supplying and applying potable water as needed for dust control throughout the project. Apply all liquids in a manner that does not result in runoff.
- B. Commercial dust control products may be approved in a case by case basis.
- C. Use means necessary to control dust on and near the work, and on and near off-site areas, if such dust is caused by the contractor's operations during performance of the work, or if resulting from the condition in which the contractor leaves the site.
- D. Thoroughly moisten surfaces as required to prevent dust being a nuisance to the public, neighbors, and personnel performing other work on the site.

3.6 TRAFFIC CONTROL

- A. A temporary traffic control plan shall be prepared by the contractor for any work that will impact vehicular or pedestrian traffic. Contractor shall submit all traffic plans to the County Traffic Engineering Department for approval. Allow 10 working days for traffic plan approval. The County Traffic Engineering Department shall approve any proposed changes in the temporary traffic control plan.
- B. Consider and address the safety of pedestrians in the Traffic Control Plan, and if altering pedestrian traffic, provide an alternate pedestrian route.

- C. Traffic control devices shall be properly maintained and inspected daily during the project.
- D. A Traffic Control Supervisor shall be designated and be available for call out 24 hours per day.
- E. The Traffic Control Supervisor shall be certified in Work-zone Traffic Control.
- F. Traffic Control Supervisor shall perform on site inspections of work zone twice daily and once nightly if traffic control devices will be in place during night hours.
- G. Contractor is responsible for providing construction coordination to include a weekly log of daily inspections of barricade and maintenance schedules on projects that are over one week duration.
- H. Traffic plans shall conform to the latest edition of the Manual of Uniform Traffic Control Devices (latest edition) and may be required to follow AASHTO safety recommendations.
- I. Temporary Concrete Barriers must be used where open trenches are within 6 feet of driving lanes. End sections of the temporary concrete barrier must be angled away from the traveled way.
- J. Traffic Control Devices shall be kept in a clean condition. Washing of equipment is incidental to its placement and maintenance.
- K. Contractor is responsible for the obliteration of any conflicting striping and for any temporary striping.

3.7 DEMOLITION

- A. Any person or contractor performing demolition on structures or appurtenance which have utility in the vicinity must contact and make arrangement with DPU to assess the impact on DPU infrastructure.
- B. Upon review by the DPU, the person or contractor must pay by means of a back charge any cost associated with demolition that impacts any DPU infrastructure – either temporary or permanent - including but not limited to electric, gas, water or wastewater.
- C. Person or contractor excavating as part of the demolition process shall contract NM811 in accordance with NM State Statues.

END OF SECTION



**National Pollutant Discharge Elimination System (NPDES)
Storm Water Pollution Prevention Plan (SWPPP) Inspection Checklist
Los Alamos County Department of Public Utilities**

Project Title: _____

Project Location: _____

Inspector/Inspection Date: _____

Weather

 Current: _____

 Last 24 Hours: _____

 Date of Last Rainfall _____

 Amount of Last Rainfall _____

Chemicals Stored On Site: _____

Method of Chemical Containment: _____

Soil Disturbance Log Status: _____

Assessment of Best Management Practices (BMPs)

Part A. Erosion Prevention - Note condition and corrective actions for deficiently applied BMPs

<p>1. Construction Access – Trackout, Street Clean</p>	<p><input type="checkbox"/> OK <input type="checkbox"/> Deficient</p>
<p>2. Soil Stabilization - Signs of Erosion, Gullies, Slope Failures, Rills</p>	<p><input type="checkbox"/> OK <input type="checkbox"/> Deficient</p>
<p>3. Slope Protection – Plastic Condition, Grass Growing, Hydroseed Condition, Matting</p>	<p><input type="checkbox"/> OK <input type="checkbox"/> Deficient</p>
<p>4. Perimeter Control - Clearing Limits Marked, Silt Fences, Swales</p>	<p><input type="checkbox"/> OK <input type="checkbox"/> Deficient</p>
<p>5. Conveyances Stable – Ditches, Check Dams Intact, Sand Bags, Slope Drains</p>	<p><input type="checkbox"/> OK <input type="checkbox"/> Deficient</p>

6. Temporary Erosion and Sediment Control Management - Revisions Required	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
7. Water Management - Infiltration, Clean/Dirty Water Separated, Offsite Water Bypassed	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
8. Outlet Protection – Stabilized	<input type="checkbox"/> OK <input type="checkbox"/> Deficient

Part B. Sediment Control - Note condition and corrective actions for deficiently applied BMPs

1. Storm water Detention and Monitoring	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
2. BMP Maintenance	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
3. Inlet Protection	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
4. Dust Control	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
5. Spill Prevention	<input type="checkbox"/> OK <input type="checkbox"/> Deficient
6. Condition of Discharge Water	<input type="checkbox"/> OK <input type="checkbox"/> Deficient

Other/Continued Comments, Conditions, Corrective Actions, and Observations:

SECTION 104 UNDERGROUND FACILITIES STAKING REQUIREMENTS

PART 1 GENERAL

1.1 WORK INCLUDED

This standard provides the requirements for the construction staking of public utility infrastructure.

1.2 QUALITY ASSURANCE

Utility staking is contingent upon the completion of the following by the owner/developer:

- A. Right-of-way and easements establishing legal access for new utility infrastructure shall be granted and filed in the office of the Los Alamos County Clerk prior to beginning construction.
- B. Right-of way, easements, lot corners and lot boundaries shall be staked by a New Mexico Licensed Professional Surveyor when utility infrastructure will be constructed within or adjacent to an established legal boundary to prevent encroachments and ensure legal access to facilities is maintained.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A. The contractor is responsible for completion and maintenance of all construction staking necessary to complete the work, consistent with standard survey practices.
- B. Clearing and grubbing shall be completed prior to staking.
- C. Staking utility infrastructure when grading has not been completed to final grades or final subgrade, stakes indicating grade cut or fills shall be placed as necessary to ensure utility infrastructure will be constructed at the proper depth when final grading is complete. All infrastructure not installed to the proper burial depth due to lack of staking or incorrect staking shall be removed and replaced at the proper depth at the expense of the contractor.
- D. Subgrade stakes: subgrade stakes are generally correct to within 0.2' which is sufficient precision to stake subgrade. However, care must be exercised when staking a utility location in that a greater degree of precision may be necessary.
- E. The burial depths and tolerances specified or drawn elsewhere in these construction standards for each specific utility shall be met.
- F. It is the contractor's responsibility to stake location and finished grade in all pertinent features, including but not limited to, roadways, curb and gutter, sidewalks, drainage structures, signage, retaining walls that are necessary for placement of utility components as specified.
- G. Offset distance: a distance shall be selected which will ensure the protection of stakes during trenching. This distance is generally 10' to 15' to centerline of trench but may depend on site conditions. The stakes may be placed adjacent to the contractor's sub grade stakes if the offset distance is adequate, or may, in fact, be the same if so marked.
- H. Stake interval: stakes will be placed as required in order to ensure that the trench will be properly aligned and at all utility components such as vaults, pedestals, transformers,

manholes, clean-outs, meter sets, fire hydrants, changes in direction, fitting location, valve location and other utility components that require to be placed at a specified location and depth. In no case shall staking intervals be less than 50'. The interval may have to be decreased to 25' or less on curves or where site conditions otherwise dictate.

- I. Although the center location on small electric boxes and property line structures are normally adequate, in most cases, it will be necessary to stake two corners on the larger boxes. When a box is to be placed against the back face of a sidewalk or any other critical location, care must be exercised to ensure adequate precision in staking.

END OF SECTION

**SECTION 202
EXCAVATION, TRENCHING AND BACKFILL**

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This section covers trenching and backfill requirements for buried gas, water and sewer piping systems, as well as electric and communication conduits.
- B. This section also covers requirements for excavation and for compaction of succeeding layers after backfill has been placed around pipe, electric conduits, communication conduits, under manholes, surrounding manholes, under vaults, surrounding vaults, beneath equipment bases where detailed in drawings, as well as backfill associated with structures to be abandoned in place.

1.2 RELATED WORK

- A. Section 301 Gas Systems
- B. Section 401 Underground Ductbank Systems
- C. Section 501 Sewer Systems
- D. Section 502 Sewer Manholes
- E. Section 601 Water Systems

1.3 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the general designation only.
- B. American Society for Testing and Materials (ASTM) Publications:
 - D - 1557 Moisture-Density Relations of Soils and Soil Aggregate Mixtures
 - D - 2419 Sand Equivalent Value of Soils and Fine Aggregate
 - D - 2487 Classification of Soils for Engineering Purposes
- C. State of New Mexico Excavation Law: Chapter 62, Article 14 NMSA 1978, 2001 Amendment, and all amendments in place at the time of construction.

1.4 QUALITY ASSURANCE

- A. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted backfill material to the maximum dry density of the material as determined by the procedure set forth in ASTM Designation D1557 (Modified Proctor).

1.5 GENERAL REQUIREMENTS

A. EXISTING UTILITIES

- 1. The protection of active utility lines shown on the Plans or otherwise made known to the Contractor shall be the responsibility of the Contractor, prior to and during excavation. Active utility lines shown to be removed, retired, or abandoned in place shall be protected until the replacement utility lines are in place and ready to begin service or be otherwise activated. Any damaged utility shall be repaired or replaced

at the Contractor's expense. Potholing, as may be required to verify utility locations, shall also be the responsibility of the Contractor. Hand digging shall be performed at any time the excavation is within 18 inches of a live utility line per New Mexico Excavation Law. Contractor shall be responsible for contacting all utility companies and coordinating any work that requires relocation or abandonment of existing utilities.

2. Abandoned utility lines shall be cut and capped on both ends of the abandoned section.
3. If active utility lines are encountered and are not shown on the Plans or otherwise made known to the Contractor, promptly take necessary steps to assure no utility services are interrupted.
4. If any utility service is interrupted as a result of work under this section, immediately contact The Department of Public Utilities at 662-8333, or Police Dispatch at 662-8222, to restore service by repairing the damaged utility at Contractor's expense.
5. Existing utilities, whether or not shown on the drawings, and believed to interfere with the installation of permanent facilities being constructed under this contract, Contractor shall immediately send written notification to the Project Manager for direction.
6. Contractor shall not proceed with permanent repair or relocation of any existing utilities until written instructions are received from the Department of Public Utilities.

B. PROTECTION OF PERSONS & PROPERTY

1. Contractor shall install all necessary underpinning, shoring, lagging, cribbing, and bracing of ample strength to support adjoining soils, paving and structures. All such items shall be so constructed that they will not interfere with the building of any structural elements, and shall be removed upon completion of the work.
2. Contractor shall barricade open depressions and holes occurring as part of this work, and post warning lights on property adjacent to or with public access, all in compliance with County-approved traffic control plan.
3. Contractor shall protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by operations of Contractor.
4. Contractor shall install fences and barricades to secure the area from the public.
5. Contractor shall maintain access to areas adjacent to the project site(s) at all times.
6. Contractor shall maintain and/or replace all bench marks, monuments, construction stakes and other reference points. Any property boundary pins, survey monuments or survey benchmarks disturbed or damaged by the contractor shall be replaced at the expense of the contractor, by a surveyor licensed in the state of New Mexico.
7. Contractor shall repair or restore damage to any portion of the work resulting from movement of the sides or bottom of trenches or other excavation which is

attributable to the Contractor's acts or omissions, whether sides are braced or not.

C. SHORING

1. The Contractor shall be solely responsible for all bracing and shoring in compliance with all local, state and federal laws.

D. DEWATERING

1. Contractor shall remove all water, including rain water, encountered during trenching and substructure work to an approved location by pumps, drains, and other approved methods.
2. Contractor shall keep excavations and site construction area free from extraneous water.

E. DUST CONTROL:

1. Contractor shall use any and all means necessary to control dust on and near the work, and on and near off-site areas, if such dust is caused by the Contractor's operations during performance of the Work, or if resulting from the condition in which the Contractor leaves the site.
2. Thoroughly moistening surfaces as required to prevent dust from becoming a nuisance to the public, neighbors, and personnel performing other work on the site shall be the responsibility of the Contractor, throughout the construction period.

F. TRENCHING IN ROCK

Unless Trenching in Rock is specifically listed as a bid item, all trenching to be performed under this contract will be considered incidental to pipe, conduit, or ductbank installation. Excavation in Rock, as may be defined elsewhere in this contract, shall apply only to excavation other than trenching.

The Owner shall provide pertinent information to the contractor, following all appropriate subsoil investigations conducted on the project site, prior to project bidding. Contractor may, at contractor's expense, expand on the scope of such subsoil investigations.

Payment for trenching in rock shall be made in accordance with the specific bid item, and shall be adjusted only if quantities vary from those originally bid.

PART 2 PRODUCTS

2.1 BACKFILL MATERIALS

- A. Backfill Materials are those materials placed in the trench between the bedding material to the top of the trench or to below specified base course under roadways or those material used to fill excavations for subsurface structures. On-site native material used as backfill shall be select material free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, frozen, deleterious, or objectionable materials, free of stones or lumps exceeding 3 inches in greatest dimension satisfactory to the Project Manager.

- B. Soft, wet, plastic soils which may be expansive, clay soils having a natural in place water content in excess of 30%, soils containing more than 5% (by weight) fibrous organic materials, and soils having a plasticity index greater than 30 shall be considered unsuitable for use as backfill.
- C. In the event that native materials not meet the requirements specified for bedding material or backfill, or if the specified field compaction cannot be obtained, contractor shall import suitable material at no additional cost to the owner.
- D. The removal, hauling, and disposal of unsuitable material, such as rocks, pavement, concrete, demolished structures, debris, or other extraneous items shall be the responsibility of the Contractor, and shall be performed at no additional cost to the owner. Securing the site and coordinating with the respective agencies or disposal site owners shall also be the responsibility of the Contractor to do at no additional cost to the owner and in accordance with applicable environmental regulations.

2.2 PIPE BEDDING MATERIAL

- A. Pipe bedding, a minimum 4 inches below bottom of pipe and six inches above the top of the pipe shall be permeable material with a maximum particle size of 0.5 inches in any dimension, with no sharp rocks. Portion passing No. 200 sieve shall be 50% maximum. Contractor shall provide a submittal for bedding material for approval by the Project Manager, prior to installing such bedding material.

2.3 TRENCHES ON PAVED SURFACES

- A. Existing pavement surfaces shall be neatly saw-cut, removed and disposed of by Contractor in a lawful manner and at the Contractor's expense, as necessary for trenching operations to take place. Removed pavement or asphalt shall never be used as backfill. Paved surfaces shall be replaced upon backfilling the trench, in compliance with Los Alamos County Public Works Department Construction Standards. Asphalt and base course thickness shall be as detailed in plans, or at a minimum match existing concrete pavement or asphalt and base course section.

PART 3 EXECUTION

3.1 GENERAL TRENCHING AND EXCAVATING

- A. Trenches may be excavated either by hand, or by machine. Trenches shall be cut with vertical sides, and shall be of sufficient width to provide adequate space for working therein. When applicable such space shall have adequate clear distance when shoring is used, so that pipe can be properly placed and aligned in conformity with the plans. Trench sides shall be parallel to and at equal distance from the center-line of the pipe, when aligned as shown on drawings.
- B. Pipe trenches shall be excavated to a depth below the bottom of the pipe sufficient to provide for pipe bedding materials as required by Section 2.2.
- C. Where a trench has been excavated below the designed grade, the bottom of the trench shall be refilled to proper subgrade with approved material well compacted in place, in an approved manner.
- D. No more than 150 feet of trench shall be opened at any one time unless approved by the Project Manager.

- E. If practical, no trench or holes shall be left open overnight. Use steel plating to protect open trenches overnight.
- F. Excavation for thrust blocks shall be neat to the line and dimensions shown or called for on the plans.
- G. Provide for dewatering trenches and excavations and subsequent control of ground water, utilizing such pumps or other equipment as may be necessary to control ground water and seepage until backfilling is completed.
- H. The contractor shall remove and legally dispose of all excess excavated material and demolition debris.

3.2 GENERAL BEDDING

- A. Utilities shall be laid on a layer of firm bedding material, per section 2.2 A, not less than four (4) inches in depth as shown or as noted on the plans and detail drawings. Compact as specified herein.
- B. Upon completion of bedding operations and, prior to the installation of pipe or appurtenances, notify the Project Manager who will then inspect the bedding layer. Pipe laying shall not commence until the bedding has been approved. Upon completion of placement of 6" of bedding above pipe or conduit notify the Project Manager who will then inspect.

3.3 GENERAL BACKFILLING

- A. Backfill shall be as shown on the plans. Place in 8-inch maximum lifts. Bring up evenly on each side, and for the full length of the structure. Ensure that no damage is done to structures or protective coatings thereon. Compact each loose lift as specified in Paragraph "General Compaction" before placing the next lift. Where unacceptable settlements occur in trenches and pits due to improper compaction, excavate to the depth necessary to rectify the problem, then backfill and compact the excavation as specified herein and restore the surface to the required elevation.
- B. No backfill shall be placed until the line has been inspected and bedding approved.

3.4 GENERAL COMPACTION

- A. Use hand-operated plate type vibratory or other suitable hand tampers in areas not accessible to larger rollers or compactors. Contractor shall avoid damaging structures, pipes and protective pipe coatings. Compaction shall be in accordance with the following unless otherwise specified. If necessary, the Contractor's selected equipment and construction procedure shall be altered, changed or modified in order to meet the specified compaction requirements.
- B. Initial bedding shall be carefully packed under the haunches of the pipe and brought up simultaneously on both sides so as to prevent any displacement of the pipe from its true alignment. Backfill shall be compacted in layers not more than eight (8) inches in thickness in a manner that will preclude moving the pipe, to not less than 90%, and 95% within road right of ways, and as specified. Base course shall be compacted as required by roadway authority.
- C. Backfill above the bedding shall be placed in loose lifts not exceeding eight (8) inches in thickness before compaction, and compacted by the use of pneumatic tampers or other mechanical means approved. Water or dry, as required, to bring the soils as close as

practicable to the optimum moisture content for proper compaction. Compaction equipment or methods that produce horizontal or vertical earth pressures that may cause excessive displacement or may damage the pipeline will not be permitted.

- D. Backfill will be inspected during placement. Backfill not compacted in accordance with these specifications shall be recompact, or removed as necessary and replaced to meet specified requirements prior to proceeding with the work.
- E. Contractor is responsible for protection and maintenance of work during construction and until the project is accepted. The contractor will not be paid an additional amount for such work.
- F. Open excavations and backfilled trenches that have not been paved shall be protected from moisture that may sacrifice compaction or backfill quality. Base course or asphalt shall not be placed on subgrade or backfill that is visibly saturated. Saturated subgrade and backfill shall be removed, replaced, recompact per these specifications and demonstrated to be in conformance with these specifications by testing performed by an approved testing laboratory at the expense of the contractor. Frequency and location of this testing will be determined by the Project Manager.

3.5 GENERAL BRACING AND SHORING

- A. The Contractor shall furnish, place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; and to prevent damage to or adversely affect adjacent structures, facilities, landscaping, or pavement.
- B. Upon completion of the work, all bracing and shoring shall be removed.

3.6 FIELD QUALITY CONTROL

- A. Compaction test are required to be performed by a qualified material testing Laboratory provided by the Contractor and at the expense of the Contractor, and test results shall be provided to the engineer directly from the laboratory.
- B. Definition of road prism in these specifications is all subsurface material directly below paving, sidewalk, curb, valley gutter, roadway islands, landscaping and bar ditches within a road right of way.
- C. Compaction requirements and test schedule:
 - 1. Trenches under road prism 95% compaction required for bedding and backfill. Minimum of one field density test for each compacted 12" layer of trench backfill for each 400 linear feet of trench.
 - 2. Trenches crossings under road prism 95% compaction required. Minimum of one field density test for each 12" compacted layer of trench backfill at each trench road crossing.
 - 3. Trenches not under road prism 90% compaction required. Minimum of one field density test for each 12" compacted layer of trench backfill for each trench less than 400 linear feet.

4. New manholes, pull boxes or vaults, 95% compaction required. Minimum of one field density test for each 12" compacted layer of backfill for each structure.
 5. Manhole bases, pull box bases, transformer pads, vault bases and switch pads 95% compaction required. Minimum of one field density test of prepared subgrade.
- D. If backfill has been placed, that is below the specified density, provide additional compaction with subsequent retesting until successful compaction is achieved at no cost to the owner.

3.7 DUST ALLEVIATION AND CONTROL

- A. Contractor shall be responsible for and shall provide pollution and dust abatement and control measures satisfactorily during the course of the work. Water trucks shall be equipped with a directional spray nozzle.

3.8 FINISH OPERATIONS

- A. Pipes shall be laid to finished grades indicated on the plans.
- B. Contractor shall dispose of all surplus material or material unsuitable for filling or grading off the site in a legal manner at no additional cost to the owner.
- C. Satisfactorily restore any existing improvements, paving, landscaping, and other utilities disturbed during the course of constructing the improvements.
- D. Existing traffic markings and control devices damaged or disturbed during construction shall be replaced or repaired to the satisfaction of the Project Manager.

END OF SECTION

**SECTION 401
UNDERGROUND DUCTBANK SYSTEMS**

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Underground conduit system for electric power.
- B. Underground conduit system for communications.
- C. Pull boxes and vaults for electric power.
- D. Pull boxes and vaults for communications.

1.2 DEFINITION

- A. "Duct" as used herein, is a single enclosed raceway for conductors or cable.
- B. "Conduit" is a structure containing one or more ducts.
- C. "Conduit System" is the combination of conduit, conduits, manholes, handholes, and/or vaults joined to form an integrated whole.

1.3 REFERENCE STANDARDS

- A. Publications noted in these specifications form a part of these specifications to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. Where reference is made to publications and standards, the revision in effect at the time of bid opening shall apply.

1.4 WORK PERFORMED BY THE DEPARTMENT OF PUBLIC UTILITIES (DPU)

- A. The Department of Public Utilities shall terminate all primary conductors necessary to energize new distribution circuits. The Contractor shall install and terminate secondary or service conductors when specified and approved by Department of Public Utilities. Contractor will provide and install connectors on secondary lines as specified by Department of Public Utilities.

1.5 SUBMITTALS

Submit the following in accordance with Section 102 Submittal Procedures.

- 1. Catalog Data: Contractor shall submit catalog data describing cable, pull boxes, pre-cast concrete vaults, manhole frames and lids, ladders, and cable

racks. Data substantiating that materials comply with specified requirements shall be included in submittal.

2. Catalog Data: Contractor shall submit catalog data describing all PVC duct, fittings, couplings, terminations, associated conduit system materials and galvanized 90-degree bends.
3. Test Reports: Contractor shall submit a report of duct blockage and cable tests.
4. As-Built drawings with details including burial depth, ductbank configuration, materials, lengths and stub up locations shall be submitted. The original design drawings are not to be submitted in the place of As-Built drawings.

1.6 QUALITY ASSURANCE

- A. Contractor shall comply with the National Electrical Code (NEC) and National Electrical Safety Code (NESC) for components and installation.
- B. Contractor shall provide products that are listed and labeled by a Nationally Recognized Testing Laboratory (NRTL) for the application, installation condition, and the environment in which installed.
- C. Contractor shall provide products that are accepted by Rural Utility Service (RUS)

1.7 RECEIVING, STORING AND PROTECTING

- A. Contractor shall receive, store, protect, and handle products according to NECA 1 – Standard Practices for Good Workmanship in Electrical Construction.

1.8 SEQUENCING AND SCHEDULING

- A. Installation of conduit or medium voltage cable must be coordinated with the Department of Public Utilities at least two working days prior to beginning work.
- B. Contractor shall schedule the inspection of each trench segment before bedding is placed.
- C. Contractor shall notify the Project Manager at least two days prior to duct tests.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. All submittals shall be approved by the Department of Public Utilities engineer prior to installation. No substitutions will be made on previously approved items without new submittal approval.

2.2 RIGID GALVANIZED STEEL CONDUIT AND FITTINGS

- A. Contractor shall furnish rigid galvanized steel conduit (RGS) that meets the requirements of UL6 – *Rigid Metal Electrical Conduit* and ANSI C80.1 – *Rigid Steel Conduit, Zinc Coated*.
- B. For rigid galvanized steel conduit and 90-degree elbows, the contractor shall furnish zinc-plated, threaded, malleable iron fittings and conduit bodies that meet the requirements of UL514B and ANSI/NEMA FB1.

2.3 RIGID NON-METALLIC CONDUIT AND FITTINGS

- A. Rigid, non-metallic duct (PVC) that meets the requirements of UL651 – Schedule 40 and 80 PVC duct and NEMA TC 2 – Electrical Plastic Tubing and Conduit, ANSI C80.3 shall be furnished by the contractor.
- B. For rigid non-metallic duct, Contractor shall furnish non-metallic, solvent-welded socket fittings that meet the requirements of UL514C – Non-Metallic Fittings for Conduit and Outlet Boxes, and NEMA TC 3 – PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- C. All non-metallic ducts shall be solvent welded.

2.4 USE THE FOLLOWING DUCT MATERIALS:

- 1. Electrical grade Schedule 40 PVC rigid non-metallic duct is required for electric conduit systems.
- 2. Electrical grade Schedule 40 PVC rigid non-metallic duct is required for communication conduit systems.
- 3. Long sweep tape-wrapped galvanized rigid steel 90 and 45-degree elbows shall be used in electric conduit systems and for elbow and riser where ducts turn up to the surface as indicated in drawings.
- 4. Long sweep Schedule 40 PVC rigid non-metallic elbows shall be used in communication conduit systems.

2.5 DUCT SPACING

- A. Ducts shall be laid so that they remain in sequence and each layer remains distinct. Contractor will provide and install spacers if specified by Department of Public Utilities

2.6 CORROSION PROTECTION TAPE

- A. Contractor shall furnish pressure-sensitive, 10 mil thick. PVC based tape for corrosion protection of metal duct and fittings. Manufacturer: 3M, Type 50 or approved equivalent.

2.7 UNDERGROUND WARNING TAPE

- A. Underground warning tape shall be placed in areas where an underground conduit system is installed.
- B. Contractor shall use 6-inch wide, 0.004-inch thick, polyethylene underground warning tape with the following background colors:
 - 1. Electric: Red
 - 2. Communication: Orange
- C. Lettering shall be black and indicate the type service buried below.
 - 1. Electric: "CAUTION ELECTRIC LINE BURIED BELOW"
 - 2. Communications: "CAUTION COMMUNICATION LINE BURIED BELOW"Manufacturer: Electromark, Utility Safeguard, LLC or approved equivalent.

2.8 DUCT CAPS

- A. Duct caps are required on all unused ducts. The caps shall be designed to hold the pull string and seal the duct completely to prevent moisture intrusion.
- B. Contractor shall provide PVC end caps, which are glued securely on the end of the duct that will produce a positive seal in unused ducts against water and gas. Caps shall be made of schedule 40 PVC. Manufacturer: Carlon, Condux, Jackmoon USA, Inc or approved equivalent.

2.9 PRE-CAST PULL BOXES

- A. Contractor shall provide pre-cast polymer concrete pull boxes outside of the perimeters of roads in areas subject to light traffic.
 - 1. Electrical pull boxes shall be in compliance with the Department of Public Utilities Standards.
 - 2. County Communication pull boxes shall have minimum outside dimensions: 48"H x 48"D x 48"W.

3. Heavy Duty Covers shall be designed to H-10 or H-20; ASTM C 857-95 for incidental or non-deliberate traffic areas and are not intended to be installed in roadways.
4. Manufacturer: Carson Industries, Quazite, New Basis, New Line

2.10 PRE-CAST CONCRETE VAULTS

- A. Contractor shall provide pre-cast concrete vaults inside and outside of the perimeters of roads in areas subject to specified traffic ratings.
 1. Manholes shall be ordered to comply with specified dimensions.
 2. Contractor shall provide grounding lugs attached to ½-inch grounding inserts.
 3. Heavy Duty Covers shall have be designed in compliance with H-20; ASTM C 857-95.
 4. Contractor shall construct manholes using 4000 psi concrete.
 5. Contractor shall provide watertight seal between all manhole components.
 6. Contractor shall provide pulling eyes within the vault as detailed in drawings.
 7. Contractor shall provide lifting eyes and hardware on all manhole components.
 8. Contractor shall provide PVC duct terminations as specified in project detail drawings.

2.11 VAULT ACCESSORIES

1. Contractor shall provide removable ladder with all associated ladder hardware.
2. Contractor shall provide Risers as specified with appropriate lifting hardware.
3. Contractor shall provide a 36-inch steel lid with "Electric" stamped finish.
4. Contractor shall provide Unistrut rails cast into vault walls, two on each face, separated by 48 inches.

PART 3 EXECUTION

3.1 PREPARATION

- A. Contractor shall install underground conduit systems according to the Department of Public Utilities Standards
- B. Conduit system routing shown on Drawings shall be considered an approximation of location unless specifically dimensioned. Contractor shall route system conduit as required to complete the system.
 - 1. Contractor shall coordinate all underground conduit system work in a manner which avoids interference with other projects and existing utilities.
 - 2. Routing and termination locations of conduit system shall be verified prior to excavation for rough-in.
 - 3. Contractor shall verify that field measurements are as shown on Drawings and convey actual measurements to the as-built drawing set.
- C. Contractor shall position trench so envelope of conduit will have 12-inch minimum horizontal and vertical separations from parallel or perpendicular runs of other existing utility pipes or ducts.
- D. Separations from existing utilities may be greater than 12 inches.

3.2 EXCAVATION AND BACKFILL

- A. Excavation shall be performed in accordance with Section 202 Excavation, Trench and Backfill.
- B. Contractor shall perform excavation for pull boxes, vaults, and duct to the depth specified by Drawings in a manner that provides solid bearing.
- C. When excavating for trenches, Contractor shall provide sufficient width within the trench to receive work to be installed while providing specified bedding coverage on sides.

3.3 UNDERGROUND CONDUIT INSTALLATION

- A. Contractor shall install the number and size of ducts as indicated on the Drawings.
- B. Contractor shall abide by the following duct material specifications:
 - 1. Electrical grade Schedule 40 PVC rigid non-metallic duct shall be used for electric conduit systems.

2. Electrical grade Schedule 40 PVC rigid non-metallic duct shall be used for communication conduit systems.
 3. Contractor shall use long sweep, tape-wrapped, galvanized rigid steel for 90-degree and 45-degree elbows for electric conduit systems.
 4. Contractor shall use long sweep Schedule 40 PVC rigid non-metallic elbows in communication conduit systems.
- C. Where ducts turn up into the surface, Contractor shall use RGS, IMC or PVC coated rigid steel elbows with minimum 36-inch radius and terminate in a coupling 6 inches above the inner surface in a pull box or 4 inches above the surface of equipment pad. Contractor shall install zinc-plated malleable iron pipe plug in each unused duct stub-up.
- D. For ducts installed through holes in existing vault or manhole walls, Contractor shall pack opening with non-shrink grout and feather the edge of the grout around each bell in a manner that conforms to the curvature of the bell end. Contractor shall remove sharp edges and projections and fill voids within 6 inches of bell ends.
- E. Contractor shall ground metallic risers exposed to contact according to the requirements of the Department of Public Utilities. Exothermic welded connections for concealed grounding connections shall be used.
- F. In underground ducts, make-up joints shall be tight, driven home from both sides and made thoroughly waterproofed. On non-metallic ducts, Contractor shall use manufacturer's recommended primer and solvent-cement. On metallic conduits, Contractor shall coat male threads with red colored, alkyd base, tank and structural primer that is suitable for galvanized steel; make-up fittings wrench-tight.
- G. Where metallic ducts are below grade, Contractor shall use plastic coated rigid steel conduit or tape-wrap with corrosion protection tape, half-lapped.
- H. Contractor shall schedule inspection of each ductbank or ductbank segment before covering. Failure to obtain inspection by the Department of Public Utilities prior to backfill will result in re-excavation of segments not previously inspected.
- I. Each duct shall be tested for blockage or deformation as follows:
1. Contractor shall clean duct using a flexible mandrel/scrapper/brush not less than 12 inches long with a diameter approximately 1/4 inch smaller than the inside diameter of the duct.
 2. If a blockage is found within the duct, the blocked section shall be replaced.

3. The Project Manager shall be notified at least two days prior to duct tests; Contractor shall submit written reports of tests to Project Manager.
- J. Contractor shall place underground warning tape in backfill 12 inches below finish grade.
 - K. Contractor shall install measuring and pulling rope in each duct and leave not less than 12 inches of rope slack at each end. Each end of the rope shall be secured with approved restraint method and the PVC cap shall be glued to seal non-metallic ducts.
 - L. Stub-Up Connections:
 1. Contractor shall use rigid steel duct or IMC for outdoor stub-up connections. Non-metallic duct may be used for those indoor stub-up connections which are not subject to physical damage.
 2. Ducts shall extend through concrete pad or floor for connection to freestanding equipment with an adjustable top or coupling threaded inside for plugs which shall be set flush with the finished floor or equipment pad.
 3. Where equipment connections are not made under this Contract, threaded insert plugs shall be installed and set flush with the floor.
 - M. Contractor shall install corrosion protection tape on metal conduits and fittings in contact with soil using half-lapped wrappings.

3.4 PULL BOX AND VAULT INSTALLATION

- A. Pull boxes and vaults shall be installed at locations specified on Drawings.
- B. Contractor shall perform excavation of suitable dimensions so that ducts enter pull box or vault at proper elevation per project detail drawing dimensions.

3.5 DUCT PLUGGING AND SEALING

- A. Contractor shall install solvent welded caps in both ends of all unused ducts.

END OF SECTION

**SECTION 501
SANITARY SEWERAGE SYSTEMS**

PART 1 GENERAL

WORK INCLUDED

- A. Conventional gravity-flow and pressure sanitary wastewater pipelines, service lines, fittings, and accessories.

1.1 SUBMITTALS

- A. Product data for pipe, fittings and accessories per Section 102 Submittal Procedures.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Ductile Iron Gravity and Force Mains.

- 1. Pipe and Fittings.

- a. Pipe AWWA C-151 ceramic-epoxy lined bell and spigot push-on joint type pipe.
- b. Fittings AWWA 153 Fittings shall be mechanical joint ductile iron per AWWA C110 full body or AWWA C153 Short body. Fittings shall be ceramic-epoxy lined and coated per AWWA C116.
- c. On force mains all fitting joints shall be mechanically restrained. Accepted mechanical restraints: Megalug by EBBA Iron Inc. or UNI-FLANGE by the Ford Meter Box CO., Inc., or DPU-approved equal.
- d. In vaults and where indicated in drawings, Contractor shall use supported flanged pipe, and fittings.
- e. Accepted manufacturers: U.S. Pipe, Griffin Pipe or American Pipe, or approved equal.

- B. Non-Pressure Gravity-flow Mains.

- 1. Pipe and Fittings.

- a. For 15-inch diameter and smaller sewers, under normal conditions of gravity flow, SDR 35 PVC pipe, per ASTM D3034 shall be used, unless otherwise indicated in the drawings.
- b. Pressure-rated pipe may be specified for gravity-flow sewers, under some conditions, such as arroyo/stream crossings and shallow-bury installations. In such cases, pipe shall be

manufactured in accordance with AWWA C-900, with bell and spigot push-on type pipe, or mechanically restrained joints.

- c. For deeper installations and for sewer sizes 18-inch diameter and larger, pipeline shall be AWWA C-900 PVC pipe in order to provide sufficient structural performance. Mechanically restrained joints may also be specified under these conditions.

2. Joints.

- a. Internally cast bell with one rubber sealing ring per ASTM D3212 and F477. Lubricant shall be per Manufacturer's recommendations.
- b. As required by the design, where necessary for structural reasons, pressure pipe may be assembled with mechanically restrained joints.

C. High Pressure Sewer Force Mains

1. Pipe and Fittings:

- a. Class 150 C-900 PVC push-on joint type pipe or mechanically restrained joints as may be specified.
- b. All fittings shall also have mechanically restrained ductile iron joints per AWWA C110 full body or AWWA C153 Short body. Fittings shall be ceramic-epoxy lined and coated per AWWA C116.

2. High Density Polyethylene Pipe (HDPE).

- a. Refer to specification Section 503 Polyethylene Pipe for Sewer and Non-Potable Water.

D. Low Pressure Sewers

1. Pipe and fittings

- a. 2" to 6" diameter: Schedule 40 PVC per ASTM 1785, with thermally fused or solvent-welded bell and spigot joints ASTM 2855 and 2564.
- b. 2" to 6" diameter: DR 17 HDPE, per ASTM F714, with thermally fused joints

E. Sewer Service Lines.

1. Pipe and Fittings: Schedule 40 PVC per ASTM D1785, Solvent welded bell and spigot joints ASTM D2855 and ASTM D2564.
2. On existing mains: Service saddles for installation on existing SDR 35 PVC or clay sewer mains shall be a cast iron or ductile iron body with

shop applied coating, stainless steel strap, and bolts, nuts and washers, with rubber gasket per ASTM D2000 as detailed in drawing 5001. Saddle shall be approved by manufacturer for use on type of pipe being fastened to. Saddles shall be manufacturer by; The General Engineering Company; or approved equal.

3. On new mains: Service laterals shall be installed on new PVC gravity sewer mains by installing a SDR-35 gasketed directional tee with run sized to fit main and branch sized to fit sewer lateral. Service line shall transition to schedule 40 PVC pipe as detailed in drawing 5002.
4. Refer to specification Section 503 Polyethylene Pipe for Sewer and Non-Potable Water for HDPE gravity sewer service saddles.
5. All sewer service connection on low-pressure sewer mains shall be connected into directional tees.

F. Valves.

1. Valves in high pressure sewers shall be plug type, with hand lever actuator in vault applications, manufactured by DeZurick, or approved equivalent.
2. Combination air and vacuum release valves shall be installed where indicated on Contract Documents, at high points on force mains. Contractor shall avoid creating high point not indicated on contract documents. Combination air release and vacuum valves shall meet the requirements of AWWA C-512 and be approved by the manufacturer for use on pressure sewer systems. The valves shall have a minimum operation pressure of 250 (psi), all stainless steel trim, cast iron single housing type body. Manufactured by APCO, VAL-MATIC, Crespin or approved equal.
3. Valves in low-pressure sewer lines shall be installed where indicated in the relevant drawings, and shall be ball type, per ASTM F1970 for PVC pipe and ASTM D3350 for HDPE pipe.

G. Service Pipe Adapter.

1. Rigid coupling, Romac 501 or Fermco Strong Back with stainless steel backing sized specifically for the pipes to be joined.

PART 3 EXECUTION

3.1 INSTALLATION OF PIPE

- A. Per Section 202 Excavation, Trenching and Backfill. Curvature in sewer lines is prohibited.
- B. Contractor shall use rigid rubber gasket on exterior of pipe to seal pipe into grout at manholes.

- C. Clean sewer lines of all sand, gravel, dirt, and other foreign materials after installation.
- D. Service Lines shall be as indicated on contract documents. Minimum 2% slope is required.
- E. Warning tape shall be installed above all gravity sewer mains, sewer force mains and sewer service lines. The warning tape shall be installed 12 inches below grade directly above the sewer pipeline. The warning tape should be green in color and have permanently printed in black letters, "Caution: Buried Sewer Line Below". The warning tape should be 6 inches in width and 5 millimeters in thickness.
- F. Locate wire shall be installed on all sewer force mains. Locate wire shall be accessible at each sewer valve vault, cleanout, and manhole receiving force main discharge.
- G. Locating wire shall be solid copper, ten (10) gauge type electrical wire with solid green jacket. All locate wire splices shall be connected with epoxy capsule connectors, or other approved mechanical connectors, waterproofed with a sealing compound and wrapped in electric tape. Locate wire must be raised in a test box every 500 feet, at a minimum, and in all locations where sewer force mains end.
- H. In accordance with ASTM D 2774, pipe connections shall be protected where an underground PVC branch or service pipe is joined to a branch fitting such as a service saddle, branch saddle or tapping tee on a main pipe, and where pipes enter or exit casings or walls. The area surrounding the connection shall be embedded in properly placed, compacted backfill, preferably in combination with a protective sleeve or other mechanical structural support to protect the PVC pipe against shear and bending loads.
- I. Repairs
 - 1. Should an area be damaged and it be determined by the Project Manager that pipe replacement is not required, pipe repairs shall be permitted. Any repairs to damaged pipe sections shall be performed using a clamp (Muller 230 or equivalent) or wrap (Metalclad DuraWrap or equivalent) at no additional cost to Owner. Should the Project Manager find that a section of pipe is damaged to a point that may be detrimental to the pipe's performance, Contractor shall completely remove damaged pipe sections and replace with undamaged pipe at no additional cost to Owner.

3.2 FIELD QUALITY CONTROL

- A. Contractor shall provide all labor, equipment and materials required to perform all specified tests. Contractor shall coordinate for all tests to be observed by a representative of the Department of Public Utilities.
- B. Air Testing for Installed PVC Sewer Pipe shall be per Uni-Bell Standard UNI-B-6.
 - 1. Contractor shall block off all manhole and line openings.

2. Low pressure air shall be introduced into the plugged line until the internal line pressure is raised to approximately 4.0 pounds per square inch (psi). After a constant pressure of 4.0 (psi) is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes to permit the temperature of the entering air to equalize with the temperature of the pipe wall.
3. After the internal line pressure has stabilized at or above 3.5 (psi), testing shall begin.
4. If the time shown in Table I, for the designated pipe size and length, elapses before the air pressure drops 1.0 (psi) the pipe section undergoing the test has passed. Alternatively, if there has been no leakage after one hour of testing, the tested pipe section has passed.
5. Should a section of pipe fail testing, Contractor shall, at own expense, determine the source(s) of leakage and repair or replace all defective materials and/or workmanship to the satisfaction of the Project Manager. The repaired line shall then be retested until the pipe section has passed all testing requirements.

C. Mandrel Test

1. The mandrel test shall be performed on all PVC and HDPE gravity mains.
2. The mandrel test shall be performed no sooner than 30 days after placement and compaction of backfill, but prior to placement of permanent surface materials.
3. Contractor shall use a rigid mandrel with diameter of at least 95% of the pipe's specified average inside diameter and a length of the mandrel circular portion at least equal to the nominal pipe diameter.
4. The mandrel shall be pulled through the pipe by hand.
5. All pipe exceeding the 5% deflection shall be re-laid or replaced by the Contractor at no additional cost to the Owner.

D. Grade Tolerances

1. Pipe shall be free from noticeable depressions or humps.
2. Invert elevations shall not exceed plus or minus 0.2 inches from elevations shown on Drawings or which can be computed from Drawings.

- E. Contractor shall perform a video inspection of all PVC, HDPE, and ductile iron sewer pipe installed from manhole to manhole. The video and a video log documenting the inspection shall be submitted to the Department of Public Utilities for review prior to acceptance of public sewer lines. Video must be performed while introducing water into the pipe being viewed.

END OF SECTION

TABLE 1
MINIMUM SPECIFIED TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 Pipe Diameter (in.)	2 Minimum Time (min:sec)	3 Length for Minimum Time (ft.)	4 Time for Longer Length (sec.)	Specification Time for Length (L) Shown (min:sec)								
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft	
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41	57:41
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48	129:48
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15	160:15
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53	193:53
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46	230:46
42	39:48	57	41.883 L	69:48	104:42	139:37	174:30	209:24	244:19	279:13	314:07	314:07
48	45:34	50	54.705 L	91:10	136:45	182:21	227:55	273:31	319:06	364:42	410:17	410:17
54	51:02	44	69.236 L	115:24	173:05	230:47	288:29	346:11	403:53	461:34	519:16	519:16
60	56:40	40	85.476 L	142:28	213:41	284:55	356:09	427:23	498:37	569:50	641:04	641:04

Note: If there has been no leakage (zero psig drop) after one hour of testing, the test section shall be accepted and the test complete

**LOS ALAMOS COUNTY DEPARTMENT OF PUBLIC UTILITIES
SEWER AIR TEST DATA SHEET**

Identification of Pipe Installation (Job name, location, contract number, etc.)

Field Test Data: (To be filled in by the Inspector)

Date: _____

Specified Maximum Pressure Drop: **1 (psig)**

Identification of Pipe Material Installed _____

Pipe Under Test				Spec. Time	Field Test Operations Data						
Upstream MH Sta #	Downstream MH Sta #	Dia. (in.)	Length (ft.)		Refer to Table (min:sec)	Pressure Initially Raised to (psig)	Time Allowed for Pressure to Stabilize (min)	Start Test Pressure (psig)	Stop Test Pressure (psig)	Elapsed Time (min:sec)	Pass or Fail

Inspector's Name and Title: _____

Signature of Inspector: _____

If a section fails, the following items should be completed:

Identify section(s) that failed _____

Leak (was) (was not) located. Method used: _____

Description of leakage found: _____

Description of corrective action taken: _____

For test results after repair refer to Test No. _____ Inspector _____

SECTION 502 SEWER STRUCTURES

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Manholes, vaults and wet wells installed for the maintenance of gravity flow sewers, energy dissipaters, lift station wet wells, and lift station valve vaults, supplied and installed complete with frames, covers and doors, as well as other associated components.

1.2 RELATED WORK

- A. Section 701 Cast-In-Place Concrete
- B. Section 702 Grout
- C. Section 501 Sanitary Sewer Systems
- D. Section 503 Polyethylene Pipe for Sewer and Non-potable Water
- E. Section 504 Sewer Flow Control
- F. Section 505 Lift Station Equipment

1.3 REFERENCED STANDARDS

- A. The publications listed below form a part of this specification. The publications are referenced in the text by their general designation only.
- B. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manhole Sections
- C. ASTM A48-07 – Standard Specification for Gray Iron Castings
- D. ASTM C923-07 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
- E. ASTM D4101-07 - Standard Specification for Polypropylene Injection and Extrusion Materials

1.4 SUBMITTALS

- A. Submit shop drawings and product data for manhole sections, mastic sealants, pipe to manhole/wet well/vault connections, steps and castings per Section 102 Submittal Procedures.

PART 2 PRODUCTS

2.1 MATERIALS

A. Precast Manhole, Wet Well, and Valve Vault Sections

1. Precast manhole sections shall be constructed with concrete having a minimum 4,000 (psi) 28-day compressive strength and have a minimum wall thickness of 4 inches. Precast sections shall meet the requirements of ASTM C478. Pre-fabricated materials other than concrete, may be acceptable, upon written approval, by the Owner, as being equivalent. Contractor shall submit complete information, including costs, on any proposed material substitution for approval by the Engineer.
2. Lift station wet wells and valve vaults shall be constructed with concrete having a minimum 4,000 (psi) 28-day compressive strength. Minimum wall thickness shall be as indicated in drawings. Precast sections shall meet the requirements of ASTM C478.

B. Gaskets

1. Mastic sealing compound per FS SS-S-210. Approved products; Kent Seal No. 2 by Hamilton Kent; CONSEAL CS 102 by Concrete Sealants Inc.; Butyl-Nek by CRETECO; BUTYL-LOK by ALOK Products, Inc., or approved equal.
2. Flexible pipe to manhole/wet well/vault connectors per ASTM C923 with hardness of 40 plus or minus 5 per ASTM D2240 (shore A durometer). Approved products; Kor-N-Seal by NPC; Z-LOK by A-LOK Products, Inc.; PSX or Cast-A Seal by Press-Seal Gasket Corp.; TYLOX by Hamilton Kent; or approved equal.

C. Castings

1. Standard manhole cast iron frame and cover per ASTM A48. Minimum combined weight of frame and cover 325 pounds. Cover shall have vent hole, monolithic lifting rod and "SEWER" cast in cover, with letters 1 inch in height minimum. Approved products by Deeter Foundry, Inc.; Neenah Foundry Company; East Jordan Iron Works, Inc.; or approved equal.
3. Entry feature (door) for wet well or vault shall be as indicated in drawings.

PART 3 EXECUTION

3.1 FABRICATION

A. Manhole/Wet Well/Vault Section

1. Precast barrels, cone sections, base and cover.
 2. Minimum inside diameter as indicated in drawings.
 3. Manholes 6 feet deep and greater shall be provided with eccentric cones.
 4. Manholes less than 6 feet deep shall be provided with flat concrete top slabs, unless specified otherwise elsewhere.
 5. Step openings for co-polymer coated steel step placement cast in sidewall.
 6. Keylock-type shall have pre-formed gaskets or mastic seal.
 7. Manholes clear opening shall be 30 inches minimum unless otherwise shown in drawings. Wet well and vault clear opening shall be as indicated in drawings.
 8. Drop, energy dissipating, or any other specialty manholes shall be as indicated on drawings.
- B. Manhole/Wet Well/Vault Height Adjustment
1. Contractor shall use precast grade adjustment rings, 12 inches maximum total adjustment height above cone or flat top to top of casting.
- C. Placing Precast Manhole/Wet Well/Vault Sections
1. Section joints shall be cleaned before applying mastic or gasket seal, completed structure shall be rigid and watertight.
 2. Sections with chipped or cracked joints shall not be accepted.
- D. Prefomed Gaskets and Flexible Pipe to Manhole/Wet Well/Vault Seals
1. Shall be installed in conformance with manufacturer's recommendations.
- E. Interior Manhole/Wet Well/Vault Finish
1. Contractor shall remove excess mastic flush with precast sections, mortar in joints and penetrations flush with precast sections, and fill in any chipped areas with non-shrink grout.
 2. Lift Station Wet Wells, Dissipating Manholes, and Manholes as indicated in drawings: Contractor shall complete surface preparation and apply finish in accordance with manufacturer's recommendations. Preparation shall include concrete walls and floor and the interior surfaces of any non-aluminum or non-stainless steel entry feature such as manhole rings and covers, entry hatches, exposed pipe and conduit, etc. Testing for full coverage (spark test) is required per manufacturer's recommendations.

3.

Approved Manufacturers:

- a. ZEBRON 386, 100% solids polyurethane, 125 mils dry film thickness (DFT). ZEBRON Low Temperature epoxy primer, 4-8 mils DFT. Color shall be Cream.
- b. Sauereisen SewerGard No. 210, aggregate-filled epoxy, 1/8 inch thick DFT.
- c. Polibrod 705 by Carboline, 125 mils DFT.

F. Manhole Invert

1. Construction shall conform to engineering drawings, with particular attention paid to elevations shown on drawings.
2. Concrete shall be placed in manhole's invert, to form a smooth transition.
3. Contractor shall invert shape to conform to radius of pipe it connects.
4. Contractor shall remove all rough sections or sharp edges which tend to obstruct flow or impede or cause material to snag.

G. Wet Well and Vault Invert/Floor

1. Construction shall conform to engineering drawings, with particular attention paid to elevations shown on drawings.
2. Concrete shall be placed in wet well and vault inverts, to form a smooth surface, and to accommodate sewage or drainage flows in accordance with engineering drawings.
3. Contractor shall remove all rough sections or sharp edges which tend to obstruct flow or impede or cause material to snag.

H. Drop Assemblies

1. Shall be constructed as shown on drawings with C-900 PVC or ductile iron pipe, both with gasketed fittings.

I. Pipe Stubouts for Future Connections

1. Where indicated in drawings stubouts shall be constructed from manholes/wet wells/vaults. They should connect to these structures, allowing a ell formed transition either at the inverts or walls, as shown on drawings.

2. Length and slope of stub-out shall be as shown on drawings.
3. Watertight temporary plug shall be laced in all stub-outs brace plug against blow-off.

J. Manholes over existing sewers

1. Base shall be built on site, around existing pipe, using 4,000 psi Portland cement concrete, per Section 701 - Cast-in-Place Concrete. Form tongue joint to match barrels for water tightness.
2. Wastewater flow shall be maintained in the affected lines at all times. Contractor shall obtain prior approval from Project manager, on the proposed method for maintaining continuous wastewater flow. Refer to section 504 Sewer Flow Control.
3. When breaking into an existing sewer manhole, its invert shall be reshaped, to provide for a smooth transition for the new flows. Care shall be taken to keep debris from entering the existing sewer.
4. Annular space between the new perforations and the new pipe shall be filled with non-shrink grout to ensure watertight conditions.

3.2 FIELD TESTING

A. Contractor shall coordinate the project manager's inspection of manhole/wet well/vault grout, invert, pipe penetrations, walls, steps, and coatings to verify their conformance with drawings and specifications.

B. Infiltration and Hydrostatic Testing

1. Structure shall be thoroughly hosed, from either the inside or the outside, with potable water.
2. No visible signs of water exfiltration (running or dripping) shall occur anywhere in or around the new structure.
3. Hydrostatic Testing shall be performed from an upstream manhole, for gravity flow lines, wet wells and vaults, when directed by the Project Manager, following the steps listed below:
 - a. Contractor shall plug all inlets and outlets.
 - b. Structure shall be filled with potable water, to $\frac{3}{4}$ height, or six inches above the highest joint.
 - c. Water shall be allowed to stand for a minimum of 24 hours.

4. Maximum leakage allowable shall be less than 0.2 gallons per hour for each foot of depth, in the 24-hour period following the beginning of the test.
5. Any structure that fails to pass the hydrostatic test shall be repaired by the Contractor at no additional cost to Owner.

END OF SECTION

SECTION 503
POLYETHYLENE PIPE FOR NON-POTABLE WATER SYSTEMS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This specification covers requirements for PE 4710 high-density polyethylene (HDPE) piping for non-potable water and includes gravity sewer systems, pressure sewer systems and pressure treated-effluent water systems. Supplying all labor, materials, equipment, and incidentals is required, as well as installation, flushing, and testing new mains, fittings, and parts as shown on the drawings and specified herein.

1.2 QUALITY ASSURANCE

- A. Submit manufacturer's data on the pipe material, fittings, valves and service material in accordance with Section 102 Submittal Procedures.
- B. Owner's Project Manager may require manufacturer's certificates showing conformance with this specification for any of the pipe materials, fittings, valves and appurtenances delivered to the job site.

1.3 REFERENCED STANDARDS

- A. The publications listed below form a part of this specification. The publications are referenced in the text only by their general designation only.
- B. American Water Works Association (AWWA) Standards, latest publications.
- C. ASTM D2683 – Socket-Type Polyethylene Fittings for Outside Diameter controlled Polyethylene Pipe and Tubing.
- D. ASTM D3261 – Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
- E. ASTM D3350 – Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
- F. PPI TR-3 – Policies and Procedures for Developing Recommended Hydro Static design Stresses for Thermoplastic Pipe Materials
- G. PPI TR-4 – Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Pipe and Fittings Compounds

PART 2 PRODUCTS

2.2 POLYETHYLENE PIPE AND FITTINGS

- A. Qualification of Manufacturers: The Manufacturer shall have manufacturing and quality assurance facilities capable of producing and assuring the quality of the pipe and fittings required by these Specifications. The Manufacturer's production facilities shall be open for inspection by the Project Manager.
- B. Materials: Black PE materials used for the manufacture of polyethylene pipe and fittings shall be PE 4710 high density polyethylene, meet ASTM D3350 cell classification 445574C, and shall be listed in the name of the pipe and fitting Manufacturer in PPI (Plastics Pipe Institute) TR-4 with a standard grade HDB rating of 1600 psi at 73°F. Color material, when used, shall be the same except for meeting ASTM D 3350 cell classification 445574E. The Manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.
- C. Polyethylene Pipe:
 - 1. Gravity sewer polyethylene pipe shall be IPS DR 17 or unless otherwise specified. Sizes 4" and above shall be manufactured to the requirements of ASTM F714 and AWWA C906-99 (IPS). Gravity sewer pipe shall have the interior portion of the joint extrusion removed to provide a smooth interior surface across joints. Gravity sewer pipe shall have a white or beige interior color.
 - 2. Pressure sewer and non-potable water pipe shall be IPS DR-9. sizes 4" and above shall be manufactured to the requirements of ASTM F714 and AWWA C906-99 (IPS).
 - 3. Approved manufacturers:
 - a. Performance Pipe
Division of Chevron Phillips Chemical Company
5085 W. Park Blvd., Suite 500
Plano, TX 75093
 - b. Duraline, Inc.
2406 N. I-35
Gainesville, TX 76241
 - c. WL Plastics
3575 Lone Star Circle, Suite 300
Fort Worth, TX 76177
- D. Service Identification Stripes for Polyethylene Pipe:
 - 1. Sewer pipe shall be black with green color stripes co-extruded into the outside surface of the pipe.
 - 2. Non-potable pipe shall be black with purple color stripes co-extruded into

the outside surface of the pipe.

- E. Polyethylene Fittings & Custom Fabrications: All fittings and custom fabrications shall be pressure rated for an internal pressure rating equal to the mating pipe.
- F. Molded Fittings: Molded fittings shall be manufactured and tested in accordance with ASTM D 3261 and shall be so marked. Molded fittings shall be tested in accordance with AWWA C906.
- G. Polyethylene Flange Adapters: Flange adapters shall be made with sufficient through-bore length to be clamped in a butt fusion-joining machine without the use of a stub-end holder. All fasteners shall be torque-rated steel bolts with stainless steel coating. All fasteners shall be torque-rated steel bolts with stainless steel coating.
- H. Back-up Rings & Flange Bolts: Flange adapters shall be fitted with ductile iron back-up rings that are pressure rated equal to or greater than the mating pipe. The back-up ring bore shall be chamfered or rounded to provide clearance to the flange adapter radius. Flange bolts and nuts shall be torque-rate Grade 3 or higher of stainless steel construction.

2.2 LOCATE WIRE AND WARNING TAPE

- A. Locate wire shall be installed on all pressure sewer mains or force mains, and non-potable water mains and service lines. Locate wire must be electrically continuous along mains and service lines. Locate wire in service cans shall extend to and be fastened to the meter can cover; leaving adequate slack to allow removal of the meter can lid without disturbing the locate wire connectivity. Locate wire shall be raised in a test box at a minimum of every 500 feet and at all locations where pressure sewer mains and non-potable water mains end. Locate wire must be accessible in a test box and at all valve boxes and meter cans.
- B. Locating wire shall be solid copper, ten (10) gauge type electrical wire. All locate wire splices shall be connected with epoxy capsule connector or other approved connection type, and wrapped in electric tape.
 - 1. Sewer pressure mains: locate wire shall have a solid green jacket.
 - 2. Non-potable water mains: locates wire shall have a solid purple jacket.
- C. Warning tape shall be installed 12" below grade above all sewer mains and non-potable water mains and service lines.
 - 1. Sewer: Warning tape shall be 6" wide, green in color, with lettering reading "CAUTION BURIED SEWER BELOW".
 - 2. Non-potable water: Warning tape shall be 6" wide, purple in color, with lettering reading "CAUTION BURIED NON-POTABLE WATER BELOW".

PART 3 EXECUTION

3.1 JOINING

- A. Heat Fusion Joining: Joints between plain end pipes and fittings shall be made by butt fusion. Joints between the main and saddle branch fittings shall be made using saddle fusion. The butt fusion and saddle fusion procedures used shall be procedures that are recommended by the pipe and fitting Manufacturer. The Contractor shall ensure that persons making heat fusion joints have received training in the ASTM F-2620 and shall have current certification and submit proof to DPU prior to performing the work. Contractor shall demonstrate his procedure to the Department of Public Utilities (DPU) and perform a sample weld, witnessed by the DPU, for testing. The Contractor shall maintain records of trained personnel, and shall certify that training was received not more than 12 months before commencing construction. Neither external, nor internal beads shall be removed, except for gravity sewer mains.
- B. Joining by Other Means: Where indicated in the plans polyethylene pipe and fittings are to be joined together or to other materials by means of flanged connections (flange adapters and back-up rings) or electro-fusion. When joining by other means, the installation instructions of the joining device manufacturer shall be observed.

3.2 INSTALLATION

- A. General: When delivered, a receiving inspection shall be performed and any shipping damage shall be reported to the manufacturer within 7 days. Installation shall be in accordance with Manufacturer's recommendations and this specification. All necessary precautions shall be taken to ensure a safe working environment in accordance with all applicable safety codes and standards.
- B. Excavation, Trenching and Backfill: Comply and conform with the conditions and requirements indicated and specified under Section 202 Excavation, Trenching and Backfill.
- C. Flange Installation: Flange connections shall be installed in accordance with the Manufacturer's recommended procedure. Flanges shall be centered and aligned to the mating component before assembling and tightening bolts. In no case shall flange bolts be used to draw the connection into alignment. Bolt threads shall be lubricated, and flat washers shall be used under the nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the Manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the Manufacturer. The final tightening torque shall be as recommended by the Manufacturer.
- D. Handling: Pipe, valves, and fittings shall be carefully handled during hauling, unloading, and placing operations, so as to avoid breakage or damage. Strap type slings shall be used for lifting and placing; no chains or hooks will be permitted. Broken or damaged pipe or appurtenances will be rejected by the Project Manager and shall thereupon be removed from the work and replaced. Avoid pushing or pulling around sharp objects. Any scratch deeper than 10 percent of the minimum pipe wall thickness of polyethylene pipe shall be cut out. Any area kinked or

buckled shall be removed. Pipe should be dragged so that it is not touching the concrete or hard surface and must be supported with soft, non-abrasive material such as wood or sandbags, etc. Pipe shall not be stored in the sunlight more than six months.

- A. Protection against shear and bending loads. In accordance with ASTM D 2774, connections shall be protected where an underground polyethylene branch or service pipe is joined to a branch fitting such as a service saddle, branch saddle or tapping tee on a main pipe and where HDPE pipe is joined to a different pipe material and where pipes enter or exit casings or walls. The area surrounding the connection shall be embedded in properly placed, compacted backfill, preferably (delete preferably) in combination with a protective sleeve or other mechanical structural support to protect the polyethylene pipe against shear and bending loads or utilizing other mechanical joint restraint fittings; as approved by DPU.

3.3 FUSION QUALITY TESTING

- A. Fusion Quality: The Contractor shall ensure the field set-up and operation of the fusion equipment, and the fusion procedure used by the Contractor's fusion operator while on site. Upon request by the Owner, the Contractor shall verify field fusion quality by making and testing a trial fusion. The trial fusion shall be allowed to cool completely; then test straps shall be cut out and bent strap tested in accordance with ASTM D 2657. If the bent strap test of the trial fusion fails at the joint, the field fusions represented by the trial fusion shall be rejected. The Contractor shall make all necessary corrections to equipment, set-up, operation and fusion procedure, and shall re-make the rejected fusions, all at own expense.

3.4 PRESSURE AND LEAK TESTING

A. General Requirements:

1. The Contractor shall provide all necessary materials, labor and equipment, and shall perform all work required in connection with the testing of the system in accordance with manufacturer's recommendations and as specified herein.
2. Hydrostatic pressure tests shall be made only after the trenches have been backfilled sufficiently to hold the pipe firmly in position.
3. Any flaw disclosed by any of the tests shall be repaired and satisfactorily re-tested.
4. Pressure Tests: Each section being tested shall be slowly filled with water with care being taken on hydrostatic tests to expel all air from the pipe by such means as are necessary.

B. Hydrostatic Test Procedure:

1. Test Pressure: Shall be 1.5 times the operating pressure specified by the County.

2. Hydrostatic leak test consists of filling pipe, an initial expansion phase, a test phase and depressurizing.
 - a. Fill the restrained test section completely with water and expel all air from the pipe.
 - b. Initial Expansion Phase: gradually pressurize the test section to a pressure that is 10% greater than the test pressure and maintain that pressure for three (3) hours. During the initial expansion phase, pipe will expand slightly. Additional water will be required to maintain pressure. It is not necessary to monitor the amount of water added during the initial expansion phase.
 - c. Test Phase: Immediately following the initial expansion phase, reduce test pressure by 10% and stop adding water. If test pressure remains within 5% of the test pressure for one (1) hour, no leakage is indicated.
 - d. At the conclusion of the test, carefully depressurize the test section by controlled release of the water.
3. Tests for PE pipe at 150% of design pressure shall be in accordance with the pipe manufacturer's recommendations.

END OF SECTION



**LOS ALAMOS COUNTY DEPARTMENT OF PUBLIC UTILITIES
HDPE SEWER AND EFFLUENT PIPE HYDROSTATIC TEST REPORT**

PROJECT NAME: _____
CONTRACTOR: _____
LOCATION: _____

PIPE DESCRIPTION

	DIMENSION RATIO (DR)	NOMINAL PIPE SIZE (INCHES)	INSIDE DIAMETER (INCHES)	LENGTH (FEET)
TEST SEGMENT				

TEST PRESSURE

PRESSURE*: _____
• The greater of 150 psig or 1.5 times the operating pressure at the lowest elevation of the test section.

HYDROSTATIC TEST

1. EXPANSION PHASE (3 HOURS)

BEGIN: _____ PRESSURE: _____
END: _____

2. TEST PHASE (1 HOUR)

BEGIN: _____ PRESSURE (LESS 10 PSI): _____
END: _____ PRESSURE : _____

If test pressure remains within 5% of the TEST PHASE pressure for one (1) hour, no leakage is indicated.	PASSED: _____
	FAILED: _____

OBSERVER _____ **DATE:** _____

**SECTION 504
SEWER FLOW CONTROL**

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Section includes the requirements for by-passing sewer flow as required during work that affects existing wastewater collection system operations.

1.2 SUBMITTALS

- A. Submit Drawings and complete design data showing methods and equipment to be utilized in sewer bypassing and dewatering per Section 102 Submittal Procedures. Include the following information:
 - 1. Indicate location of temporary sewer plugs and bypass discharge lines on Drawings.
 - 2. Capacities of pumps, prime movers, and standby equipment.
 - 3. Standby power source.
 - 4. Traffic control plan.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Provide temporary pumping and power generation equipment and controls, conduits, and other equipment to allow uninterrupted wastewater flow during project execution.
 - 1. Equip engines with mufflers and/or enclose to keep noise level less than or equal to the LAC Noise Ordinance.
 - 2. Provide pumps and by-pass lines of adequate capacity and to handle flows.
- B. Maintain sufficient equipment and materials on-site to ensure continuous and successful flow by-pass and de-watering operations, as necessary to complete the project, and:
 - 1. Keep standby pumps energized and operational at all times.
 - 2. Maintain on-site sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping, and other parts or system hardware to ensure immediate repair or modifications of any part of system as necessary.

- C. All joints and accessories shall be sized and designed to withstand at least twice the maximum system pressure, or 60 psi, whichever is greater.

PART 3 EXECUTION

3.1 PROTECTION

- A. Submit a by-pass plan, including the point of discharge, to be approved by the Project Manager at least 48 hours in advance of by-pass/de-watering operations. No bypassing to ground surface, waters of the United States, storm drains, or bypassing which results in ground water contamination or potential health hazards shall be permitted.
- B. In the event that sewage accidentally drains into drainage system or street, immediately stop overflow, notify Project Manager, and take any necessary action(s) to cleanup and disinfect the spillage in compliance with applicable laws and regulations, and to the satisfaction of Department of Public Utilities.
 - 1. If sewage is spilled onto public or private property, wash down, clean up and disinfect spillage to satisfaction of Department of Public Utilities.
 - 2. Immediately report overflows to the Department of Public Utilities at (505) 662-8333 or, after hours at (505) 662-8222, and appropriate state, federal and local agencies.

3.2 APPLICATION

- A. Plugging or Blocking: Insert sewer line plug into line upstream of section being worked. Design plug so that all or any of portion of sewage can be released.
 - 1. After cleaning, inspection, or rehabilitation work has been completed, restore flow to normal.
- B. Pumping and Flow By-Passing: When pumping and by-passing is provide pumps, conduits, and other equipment necessary to divert flow of sewage around manhole or system section in which work is to be performed.
 - 1. By-pass system shall have sufficient capacity to handle existing flows plus additional flow that may occur during peak flow periods or from precipitation.
 - 2. Construct bypass systems with materials and fixtures that will prevent any leakage or accidental overflows during pumping operation.

3.3 CLEANING

- A. Keep premises free from accumulations of waste materials, rubbish, and other debris resulting from work.
- B. Remove waste materials, rubbish, and debris from and about premises.

- C. Remove tools, construction equipment and machinery, and surplus materials.
- D. Restore to original conditions portions of the site not designated for alterations by Contract Documents.
- E. When by-pass pumping operations are complete, piping shall be drained into sanitary sewer prior to disassembly.

END OF SECTION

SECTION 601 WATER SYSTEMS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Supplying all labor, materials, equipment and incidentals required, install, flush, disinfect, and test new water mains, fittings, and apparatus as shown on the Drawings and specified herein.

1.2 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification. The publications are referenced in the text by their general designation only.
- B. American Water Works Association (AWWA) Standards, latest publications.

1.3 QUALITY ASSURANCE

- A. Water mains and appurtenances shall be subject to hydrostatic tests.
- B. Water mains and appurtenances shall be properly disinfected prior to connection to existing system.
- C. Submit manufacturer's data on the pipe material, fittings, valves and service material in accordance with Section 102 Submittal Procedures.
- D. As-built drawings with details including burial depth, pipe and fitting configuration, materials, and lengths. The original design drawings are not to be submitted in the place of As-built drawings.
- E. The Project Manager may require manufacturer's certificates showing conformance with this specification for any of the pipe materials, fittings, valves and appurtenances delivered to the job site.

PART 2 PRODUCTS

2.1 PIPE AND FITTING MATERIALS

- A. Water mains 4" to 12" in diameter shall be Ductile Iron or PVC pressure pipe.
 - 1. PVC, AWWA C900, DR-18 Class 150 pipe, push on bell end pipe. All gaskets of neoprene or other synthetic rubber per ASTM D412 and D395.
 - 2. Ductile iron pipe, AWWA C151, Class 350 pipe, cement mortar lined per ANSI/AWWA C104 /A21.4-03. All gaskets of neoprene or other synthetic rubber per ASTM D412 and D395. All pipe shall be installed with polyethylene encasement per AWWA C105, minimum 8 mil thickness.
 - 3. Fittings shall be mechanical joint ductile iron per AWWA C110 full body or C153 Short body.
 - 4. In vaults where indicated in drawings ductile iron pipe and fittings shall meet the requirements above, and shall be flanged end pipe per AWWA C115.

- B. Water mains 14" and Larger in diameter shall be Ductile Iron pipe.
 - 1. Ductile iron pipe, AWWA C151, Class 250 pipe, cement mortar lined per ANSI/AWWA C104 /A21.4-03. All gaskets of neoprene or other synthetic rubber per ASTM D412 and D395. All pipe shall be installed with polyethylene encasement per AWWA C105, minimum 8 mil thickness.
 - 2. Fittings shall be mechanical joint ductile iron per AWWA C110 full body or C153 Short body.
 - 3. In vaults where indicated in drawings ductile iron pipe and fittings shall meet the requirements above, and shall be flanged end pipe per AWWA C115.

2.2 VALVES AND VALVE BOXES

- A. Gate valves 4" to 12" shall conform to the requirements of AWWA C509 for resilient-seated valves. Stems shall be, fitted with a 2" x 2" square wrench nut and shall be manufactured to open counter-clockwise. Rated operating pressure of 250 (psi). Stem extensions shall be installed to bring the operating nut to within one (1) foot of finish grade where the depth from finished grade to operating nut exceeds four (4) feet. All exposed bolts and nuts shall be stainless steel and installed by the manufacturer. Gate valves shall be used for all valves and shall be fusion-epoxy lined and coated in conformance with the requirements AWWA Standard C-550. Manufactured by Mueller, AVK or approved equal.
- B. Gate valves 14" to 24" shall conform to the requirements of AWWA C515 for resilient-seated valves. Stems shall be fitted with a 2" x 2" square wrench nut and shall be manufactured to open counter-clockwise. Rated operating pressure of 250 (psi). Stem extensions shall be installed to bring the operating nut to within one (1) foot of finish grade where the depth from finished grade to operating nut exceeds four (4) feet. All exposed bolts and nuts shall be stainless steel and installed by the manufacturer. Gate valves shall be used for all valves and shall be fusion-epoxy lined and coated in conformance with the requirements AWWA Standard C-550. Manufactured by Mueller, AVK or approved equal.
- C. Valve boxes shall be 5 ¼" to 6" plastic body adjustable slip type with heavy duty cast iron lid and cover with "water" cast thereon. Cast iron lid set in a concrete collar as shown in drawings. Manufactured by ARMOUR Access boxes, Handley Industries, Inc., Bingham & Taylor Corp., or approved equal.
- D. In vaults and where indicated in drawings, valves shall meet the requirements of A and B above, and shall be flanged end pipe per AWWA C115 with hand wheel operator.

2.3 WATER SERVICES UP TO TWO (2) INCHES

- A. Water service piping two (2) inches in diameter or less per AWWA C800-05, shall be Engle Method Cross Linked Polyethylene (PEX) or Type K copper. All copper fittings shall be flare or compression type. All PEX fittings shall be brass insertion fittings and approved for use by the pipe manufacturer. PEX piping by WIRSBO AQUAPEX or approved equal.
- B. Water service valves and fittings two (2) inches in diameter or less per AWWA C800-05, shall be brass, of the size and type called for in the drawings, and rated at 150 psi working pressure.
- C. Meter boxes for 5/8" through 2" services shall be pre-fabricated as shown in the Drawings. Meter can construction shall be per materials and size detailed in the Drawings. When a new meter box is located in an existing driveway or sidewalk, the meter box shall be

constructed with a concrete collar as detailed in Drawings. Manufactured by Mueller, The Ford Meter Box Company, or approved equal.

- D. Curb valves and curb boxes shall be constructed where shown on the Drawings. Manufactured by Mueller, Ford Meter Box Company, A.Y. McDonald or approved equal. Curb boxes shall be 2" plastic body extension type with locking lid and plug, and be manufactured by Mueller, Handley Industries, Inc., Bingham & Taylor Corp., or approved equal.
- E. Service saddles two (2) inches in diameter or less shall be a double strap design with shop coated ductile iron body. Manufactured by Mueller, Ford Meter Box Company, A.Y. McDonald, JCM Industries or approved equal.
 - 1. Saddles on C-900 PVC shall have wide stainless steel straps.
 - 2. Saddles on ductile or cast iron pipe shall have two zinc plated, or equivalent, steel straps.

2.4 WATER SERVICES THREE (3) INCHES AND LARGER

- A. All piping in meter vault shall be flanged ductile iron in accordance with section 2.1 of this specification.
- B. All valves in meter vault shall be flanged in accordance with section 2.2 of this specification.
- C. Meter vaults and construction shall be per materials and size detailed in the drawings.
- D. All fasteners shall be torque rated steel bolts with stainless steel coating.

2.5 FIRE HYDRANTS

- A. Fire Hydrants conforming to AWWA C502; post type dry barrel design fusion epoxy lined and coated; 5 ¼" main valve opening; provided with two 2-1/2" and one 4-1/2" outlets with national standard threads; national standard 1-½" pentagon operating nut; breakaway stem and flange traffic feature; all fire hydrant heads, buries and extension spools shall be bolted with stainless steel bolts and washers. Mueller Centurion A-423; Kennedy K81D; or American B-84-B-5.
- B. All fire hydrant legs shall be six (6) inches in diameter ductile iron and shall be fully restrained with mechanical restraints.
- C. All exterior metal parts of the hydrant from the ground up shall be factory painted with two coats of paint, or one coat of primer and one coat of paint. Paint shall be yellow in color.

2.6 LOCATE WIRE & WARNING TAPE

- A. Locate wire shall be installed on all water mains and service lines. Locate wire must be electrically continuous along mains and service lines. Locate wire in service cans shall extend to, and be fastened to, the meter can cover. Locate wire must be raised in a test box at a minimum of every 500 feet and at all locations where water mains end. Locate wire must be raised and accessible in test boxes, all valve boxes, and at each fire hydrant. Text boxes manufactured by Handley Industries, Inc., Bingham & Taylor Corp., or approved equal.
- B. Locating wire shall be solid copper, ten (10) gauge type electrical wire with solid blue jacket for potable water or with solid purple jacket for non-potable water. All locate wire splices

shall be connected with epoxy capsule connector or other approved connection type, and wrapped in electric tape.

- C. Warning tape shall be installed 12" below grade above all water mains and water service lines. Warning tape shall be a minimum of 6" wide, locatable, blue in color for potable or purple in color for non-potable, with lettering reading "CAUTION BURIED WATERLINE BELOW".

2.7 JOINT RESTRAINT

- A. All joints will be mechanically restrained per schedule in drawings. Mechanical joint retainer glands and bell joint harnesses by EBBA Iron or The Ford Meter Box Company.
- B. Concrete blocking will only be used where indicated in the drawings and when approved by the Project Manager.

2.8 AIR RELIEF AND VACUUM VALVES

- A. Combination air release and vacuum valves shall meet the requirements of AWWA C-512 and shall have a minimum operation pressure of 250 (psi), all stainless steel trim, cast iron single housing type body. Manufactured by APCO, VAL-MATIC, Crespin or approved equal.

2.9 PRESSURE REDUCING VALVES

- A. Pressure reducing valves shall be CLA-VAL 90-01, CLA-VAL 690-01 or approved equal, unless otherwise shown on these contract documents.
- B. All fasteners shall be torque rated steel bolts with stainless steel coating.

PART 3 – EXECUTION

3.1 EXCAVATION, TRENCHING AND BACKFILL

- A. Shall conform to Section 202 Excavation, Trenching and Backfill of these Specifications.

3.2 PIPE INSTALLATION

- A. Installation: Water mains shall have 4 feet minimum of cover to the top of pipe and water service lines shall have 3 feet minimum of cover to top of pipe. Pipe, valves, fittings and appurtenances shall be installed in accordance with the best practice, and in conformance with the applicable requirements of the AWWA Standards.
- B. Handling: Pipe, valves, and fittings shall be carefully handled during hauling, unloading, and placing operations, so as to avoid breakage or damage. Straptypes shall be used for lifting and placing; no chains or hooks will be permitted. Broken or damaged pipe or appurtenances will be rejected by the the Project Manager and shall thereupon be removed from the work and replaced.
- C. Alignment: All pipe shall be accurately laid in conformity with the prescribed lines and grades as established by the Project Manager. Each length shall be jointed to the preceding section as specified, and after said jointing has been completed, there shall be no movement of the pipe in subsequent operations.
- D. Pipe Deflections: The laying of pipe on curved alignment will be permitted up to one-half the deflection as recommended by the respective pipe manufacturer.

- E. Cleaning: Before each new length of pipe is placed, the interior of the preceding pipe shall be carefully cleaned of all dirt and debris. When pipe laying is not in progress, all open pipe ends shall be closed with watertight plugs in a satisfactory manner.
- F. Bearing: Pipe in the trench shall have continuous uniform bearing along its bottom, except at bell holes. Blocking used to support the pipe during laying shall be placed at the end of the section and shall be removed before laying the next section. Before lowering pipe into the trench, the Contractor shall remove all stakes, debris, loose rock and other hard material from the bottom of the trench.
- G. Positioning: After the final positioning, the pipe shall be held in place in the trench with backfill material placed equally on both sides of the pipe at as many locations as are required to hold the pipe section in place. After joints are completed, the backfill material shall be redistributed and compacted as herein required.
- H. Closure: At the end of each day and when work is not in progress, the open ends of pipe installed in the line shall be closed with watertight plugs or caps.
- I. Thrust Blocking: Where indicated on Drawings as approved by the Project Manager, concrete thrust blocks of the form and dimensions shown or noted on the plans shall be provided. Thrust blocks shall be installed in strict conformance with the details shown or noted on the plans.

3.3 GATE VALVE INSTALLATION

- A. Installation: Gate valves shall be installed level and vertically plumb so that the operating nut shall be easily accessible through a level and vertically plumb gate valve box. Gate valves shall fully bear, with no holes or loose material, on undisturbed soil or fully compacted to 95% soil material meeting backfill requirements for the associated pipeline material to which the gate valve is attached.
- B. Restraint: Gate valves shall be fully restrained using mechanical joint restraint equipment per DPU standards equivalent to that for "Dead Ends or Valves".
- C. Cleaning and Coating: Gate valves shall be thoroughly cleaned of all loose dirt, rust, grease or other contaminants from halfway up the valve body to the top of the operating nut (or handwheel). All exposed and visible parts of all fasteners (nuts & bolts) holding the valve bonnet to the valve body and the stuffing box to the bonnet shall be thoroughly coated to a minimum 1.5 mils dry film thickness using a spray coating of Royston Roybond 747 or approved equivalent spray coating material per the manufacturer's instructions. The valve stem shall be masked off or otherwise protected from the spray coating. Placement of the valve box and/or backfilling operations may begin 5 minutes after application of the spray coating. NOTE: Cleaning and Coating may occur in the field after installation of the gate valve or may be completed prior to field installation of the gate valve. If cleaning and coating is completed prior to field installation then coating shall be checked for damage after field installation and a touch up coating shall be applied, if necessary, prior to valve box installation of backfilling begins.

3.4 CONNECTIONS TO EXISTING SYSTEMS

- A. Connections to existing systems shall not be made until the new mains have been satisfactorily disinfected and have passed all tests herein specified.

- B. A penetration permit, per Section 101 General Requirements of these specifications, shall be obtained from the DPU's Project Manager, no less than 48 hours in advance of planned connection.
- C. Locate wire shall be verified electrically continuous per Section 101 General Requirements of these specifications.
- D. All water valves on existing systems shall be operated by DPU staff only.

3.5 HYDROSTATIC TEST OF PVC AND DUCTILE IRON PIPE

- A. Preparation:
 - 1. The Contractor shall provide all necessary materials and equipment, and shall perform all work required in connection with the testing of the water system, as specified herein.
 - 2. Hydrostatic and leakage tests shall be made only after the trenches have been backfilled sufficiently to hold the pipe firmly in position.
 - 3. The Contractor shall provide all water necessary for filling, flushing, disinfection, and any required tests including all labor and equipment required.
- B. Procedure:
 - 1. Hydrostatic test of all new PVC waterlines shall be completed by the contractor in conformance with AWWA C 605-5.
 - 2. Hydrostatic test of all new Ductile Iron waterlines shall be completed by the contractor in conformance with AWWA C 600-5.
- C. Test Pressure and Duration:
 - 1. Test pressure shall be the greater of 150 (psi) or 1.5 times the operating pressure specified by the County.
 - 2. Hydrostatic test duration shall be 2 hours minimum.
- D. Allowable Leakage:
 - a. When test results indicate leakage beyond what is allowed in AWWA C605-5 (PVC pipe) Contractor shall conduct a survey of the line and repair any leaks found. Hydrostatic tests shall be repeated until satisfactory compliance with this specification is demonstrated. Contractor is responsible for any costs associated with the repair and re-test of pipelines.
 - b. When test results indicate leakage beyond that allowed in AWWA C600-5 (Ductile iron pipe), Contractor shall conduct a survey of the line and any leaks found shall be repaired, after which the hydrostatic test shall be repeated until satisfactory compliance with this specification is demonstrated. Contractor is responsible for any costs associated with the repair and re-test of pipelines.
 - c. Hydrostatic test shall be documented on form provided in this section.

3.6 DISINFECTION AND BACTERIOLOGICAL TEST

- A. Disinfection:

1. Following the Hydrostatic Test and before being placed in service, all new water lines shall be chlorinated in accordance with the requirements of AWWA Standard C651-05. During disinfection, water shall have a minimum 25 mg/L free chlorine concentration demonstrated by testing method approved by the Project Manager. The chlorinated water shall be retained in the main for 24 hours.
2. After chlorination has been satisfactorily completed, the lines shall be thoroughly flushed until the chlorine content in all parts of the system has been proven by test to have a chlorine concentration less than or equal to 1.0 mg/L.
3. It shall be the responsibility of the Contractor to de-chlorinate and lawfully dispose of the chlorinated water and flushing water, and avoid flooding or damage to adjacent properties or facilities.

B. Bacteriological Test:

1. After flushing the chlorine from the water system and prior to placing line in service, the Contractor shall engage the services of an approved commercial testing laboratory, to gather an approved number of representative water samples, the location and number of which shall be determined by the Project Manager. Bacteriological testing shall be completed in accordance with AWWA Standard C651-05.
2. No section of water systems will be allowed to be connected to the Department of Public Utilities existing water system when any sample of water tests indicates presence of coliform bacteria. Should the laboratory report show that any sample taken was not acceptable, Contractor shall re-chlorinate and test the water again as described herein. This process shall be repeated until satisfactory disinfection has been accomplished.
3. Contractor shall direct the laboratory to send the original report of Bacteriological Examination to the Project Manager.

END OF SECTION



**DEPARTMENT OF PUBLIC UTILITIES
PVC AND DUCTILE IRON PIPE HYDROSTATIC TEST REPORT**

PROJECT NAME: _____

CONTRACTOR: _____

LOCATION: _____

DATE: _____

OBSERVER: _____

PIPE DESCRIPTION

	MATERIAL	DIAMETER (INCHES)	LENGTH (FEET)
SEGMENT NO. 1			
SEGMENT NO. 2*			
SEGMENT NO. 3*			

* Only applies when there are segments of different size pipes being tested.

TEST PRESSURE

PRESSURE: _____

LEAKAGE

ALLOWABLE LEAKAGE FORMULA:** _____

ALLOWABLE LEAKAGE:** _____

ACTUAL LEAKAGE: _____

** PVC pipe from AWWA C605-05 / Ductile iron pipe from AWWA C600-05.

TIME (2 HOUR TEST)

BEGIN TEST: _____

PASSED: _____

END TEST: _____

FAILED: _____

NOTES:

SECTION 701 CAST IN PLACE CONCRETE

GENERAL

1.1 WORK INCLUDED

- A. Formwork, shoring, bracing, anchorage, reinforcing, and accessories for cast in place vaults and manholes.
- B. Concrete sidewalks, drive pads, curb and gutter, and median pavement.
- C. Concrete utility pads, thrust blocks, valve box collars, manhole cover collars, and fence posts.
- D. Control, expansion, and contraction joint devices associated with concrete work.

1.2 RELATED WORK IN OTHER SECTIONS

- A. Section 401 Underground Ductbank Systems
- B. Section 502 Sewer Manholes
- C. Section 601 Water Systems
- D. Section 702 Grout

1.3 DEFINITIONS

- A. Reinforced concrete is structural concrete reinforced with no less than the minimum amounts of steel reinforcement specified in ACI 318.
- B. Plain concrete is structural concrete with no reinforcement or with less reinforcement than the minimum amount specified for reinforced concrete.

1.4 REFERENCES

- A. Publications noted in these specifications shall form a part of these specifications to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. New Mexico Department of Transportation (NMDOT) Standard Specifications for Highway and Bridge Construction including any Supplemental or Interim Specifications.
- C. All concrete work, products, and materials conform to ACI 301 and other specific referenced publications and standards except where otherwise specified herein.
- D. Where reference is made to publications and standards, the revision in effect at the time of bid opening shall apply.

1.5 SUBMITTALS

- A. The contractor shall submit the following to the Project Manager, in accordance with Section 102 Submittal Procedures:

- Design mix of concrete: A request for approval of the concrete mix design shall be submitted to the Project Manager thirty (30) days minimum prior to concrete placement. Submit a mix design for each strength and type of concrete for approval. Each request shall be made in writing with a cover letter exhibiting the company name of the testing laboratory, company address and telephone number, and the signature and stamp of the New Mexico Professional Engineer responsible for work.
- Laboratory test reports for each design mix.
- Batch Tickets.
- Shop Drawings: Indicate bar sizes, spacing, locations and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, supporting and spacing devices, spacing and location of dowels, and spacing and location of water stops.
- Product Data: Provide data on joint devices (sealer and filler), attachment accessories, admixtures, rebar doweling anchorage, epoxy bonding compound, and water stops.
- Test reports of concrete field testing per Section 3.10, Field Quality Control.

1.6 QUALITY ASSURANCE

- A. Contractor shall perform Work in accordance with ACI 301, 318, and 347, CRSI 63 and Manual of Practice, ANSI/ASTM A184.
- B. The work shall be subject to inspection at all times by the Owner for the purpose of determining that the work is properly executed in accordance with this specification. Failure to detect defective workmanship or material during any interim inspection shall not constitute acceptance of workmanship and materials.
- C. Work shall conform to ACI 305R when concreting during hot weather, as well as ACI 306R when concreting during cold weather.
- D. Independent Testing Agency Qualifications shall be approved by the Department of Public Utilities, qualified according to ACI 301, ASTM C 1077 and ASTM E 329 for testing indicated.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Contractor shall not deliver concrete until vapor barrier, forms, reinforcement and embedded items are in place and ready for concrete placement. Job site storage of materials shall be in accordance with ACI 301, and contractor shall protect materials from contaminants such as grease, oil, and dirt.
- B. Reinforcement: Contractor shall store reinforcement of different sizes and shapes in separate piles on racks raised above the ground in order to avoid excessive rusting. Reinforcement material shall be protected from contaminants such as grease, oil, and dirt. Contractor shall ensure bar sizes can be accurately identified after bundles are broken and tags removed.

PRODUCTS AND MATERIALS

1.1 FORM MATERIALS AND ACCESSORIES

- A. Smooth-Formed Finished Concrete shall be constructed using form-facing panels that provide continuous, true, and smooth concrete surfaces. Forms shall be furnished in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - a. Metal form surfaces shall not contain irregularities, dents, or sags.
 - 2. Prefabricated forms.
 - a. Preformed Steel Forms: Minimum 16 gage matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
- B. Form Ties: Contractor shall use snap off type, galvanized metal cone type with waterproofing washer free of defects that could leave holes or gaps larger than 1 inch in concrete surface.
- C. Form Release Agent: Colorless mineral oil, which will not stain concrete, absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
- D. Corners: Chamfered, wood strip type; $\frac{3}{4}$ x $\frac{3}{4}$ in. size where indicated in drawings.
- E. Nails, Spikes, Lag Bolts, Through Bolts, and Anchorages: Sized as required and of sufficient strength and character to maintain formwork in place while placing concrete.

1.2 REINFORCING AND ACCESSORIES

- A. Reinforcing Steel: ASTM A 615, grade 60 deformed bars and stirrups; ties grade 40.
- B. Welded Steel Wire Fabric: ASTM A 185 Plain type in flat sheets.
- C. Concrete reinforcing shall be fabricated in accordance with CRSI Manual of Practice.
- D. Welding of reinforcing bars is not permitted.
- E. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions, including load bearing pad on bottom to prevent vapor barrier puncture. Special chairs, bolsters, bar supports, and spacers adjacent to weather exposed concrete surfaces shall be plastic coated steel type of required size and shape.
- F. Tie Wire shall be minimum 16 gage annealed type.

1.3 CONCRETE MATERIALS

- A. Cement: ASTM C 150, Type I or Type II.

- B. Fine and Coarse Aggregates: Shall conform to ASTM C 33.
- C. Water: Clean, potable water that is not detrimental to concrete.
- D. Fly Ash: Shall conform to ASTM C 618, type F. Fly ash.

1.4 ADMIXTURES

- A. Air Entrainment: Shall conform to ASTM C260.
- B. Chemical: Shall conform to ASTM C494.

1.5 ACCESSORIES

- A. Bonding Agent: Polymer resin emulsion.
- B. Vapor Barrier: 6 mil clear polyethylene film of type recommended for below grade application.
- C. Joint Filler: ASTM D 1751; asphalt impregnated fiberboard or felt, 1/4 in. thick.

1.6 CONCRETE MIX

A. STANDARD MIX DESIGN

1. The standard mix design for the Department of Public Utilities shall contain from 20% to 30% by dry weight of total cementitious material Type F fly ash conforming to ASTM C 618 for mitigating the deleterious effects of alkali-silica reaction in concrete that is common with the silicious nature of aggregates found in northern New Mexico.
- B. The compressive strength required for the various applications is indicated on the standard detail for the work. Contractor shall provide concrete that meets the following criteria:
 1. 4,000 psi exterior concrete exposed to freezing and thawing.
 - a. Compressive strength, f'_{c} : 4,000 psi @ 28 days.
 - b. Maximum nominal aggregate size: 0.75 inch.
 - c. Maximum water / cement ratio: 0.44.
 - d. Slump: 3 inches plus or minus 1 inch tolerance.
 - e. Air content: 4 to 6 percent.
 2. 3,000 psi exterior concrete exposed to freezing and thawing.
 - a. Compressive strength, f'_{c} : 3,000 psi @ 28 days.
 - b. Maximum nominal aggregate size: 0.75 inch.
 - c. Maximum water / cement ratio: 0.44.
 - d. Slump: 3 inches plus or minus 1 inch tolerance.
 - e. Air content: 4 to 6 percent.

- C. Contractor shall use accelerating admixtures in cold weather only when approved by the Project Manager. Use of admixtures will not relax cold weather placement requirements.
- D. Contractor shall use set retarding admixtures during hot weather only when approved by the Project Manager.

EXECUTION

3.1 GENERAL

- E. All concrete construction shall conform to applicable provision of ACI 301 unless otherwise specified herein.

3.2 EXAMINATION

- A. Contractor shall verify the following:
 - a. Lines, levels, block-outs, and centers before proceeding with formwork. Contractor shall ensure that dimensions agree with the Drawings.
 - b. Anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.
 - c. Erected formwork, shoring, and bracing is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.
 - d. Concrete cover for reinforcement conforms to the drawings and to Section 3.4.B herein.

3.3 FORMWORK ERECTION

- A. Formwork, shoring and bracing shall be erected to achieve design requirements and maintain tolerances in accordance with requirements of ACI 301 and ACI 347.
- B. Bracing shall be installed to ensure stability of formwork. Contractor shall shore or strengthen formwork subject to overstressing by construction loads.
- C. Form joints shall be properly aligned, made watertight and kept to a minimum.
- D. Installation shall provide formed openings where required for items to be embedded in or passing through concrete work.
- E. Contractor shall locate and set in place items that cast directly into concrete.
- F. All accessories shall be installed in accordance with manufacturer's instructions, straight, level, and plumb. Items shall not be disturbed during concrete placement.
- G. Where required, water stops shall be continuous without displacing reinforcement.
- H. Forms or bracing shall not be removed until concrete has gained sufficient strength to carry its own weight and other imposed loads without excessive deflection or creep. Shoring under elevated slabs shall remain in place for at least 7 days after concrete is placed.
- I. Forms shall be carefully loosened without the use of pry bars, hammers, or tools against finish concrete surfaces that are scheduled to be exposed.

3.4 REINFORCING PLACEMENT

- A. Contractor shall place, support, and secure reinforcement against displacement and shall not deviate from required position
- B. Minimum concrete cover around reinforcing shall be as follows:

Item	Minimum Cover, inches
Formed Concrete Surfaces Exposed to Earth, Water, and/or Weather:	
No. 5 bars and smaller, W31 or D31 wire and smaller	2
No. 6 through No. 18 bars, W45 or D45 wire	2
Footings and Base Slabs:	
At formed surfaces	2
At unformed surfaces and bottoms in contact with earth	3
Top of footings	2

C. PREPARATION

- 1. Previously placed concrete shall be prepared by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.6 PLACING CONCRETE

- A. Concrete shall be placed in accordance with ACI 301.
- B. Contractor shall notify the Project Manager a minimum of 24 hours prior to commencement of concreting operations.
- C. Reinforcement, inserts, embedded parts, formed joint fillers, joint devices, water stops, and formwork shall not be disturbed during concrete placement.
- D. Joint fillers, primer, and sealant shall be installed in accordance with manufacturer's instructions.
- E. Joint filler shall extend from bottom of slab to within 0.25 inch of finished slab surface.
- F. Joint devices shall be installed in accordance with manufacturer's instructions.
- G. Concrete shall be placed continuously between predetermined expansion, control, and construction joints.
- H. Screed floors on grade level, maintaining surface flatness with maximum level variations of 0.25 inch in 10 feet.
- I. ...

3.7 CONCRETE FINISHING

- A. Formed concrete surfaces shall be left exposed with smooth rubbed finish.
- B. Broom finish shall be performed on exterior sidewalks, vault tops, valve collars or other areas subject to pedestrian or vehicular traffic.
- C. Concrete floor surfaces shall be finished in accordance with ACI 301.
- D. New concrete finish shall match existing concrete unless otherwise approved by the Project Manager.
- E. Contractor shall avoid excessive float. Floating shall not be performed until concrete has stopped bleeding and the water sheen has left the surface. No water or cement shall be applied to the concrete surface while finishing.

1.7 CURING AND PROTECTION

- A. General.
 - 1. Immediately after placement, concrete shall be protected from premature drying and excessively hot or cold temperatures.
 - 2. Contractor shall comply with applicable practices and recommendations for hot weather concrete application from ACI 305R; for cold weather concrete applications from ACI 306R; for curing from ACI 308.

1.8 CONTROL/CONTRACTION JOINTS

- A. Where shown on drawings, joints shall be provided while concrete is still plastic.

1.9 FIELD QUALITY CONTROL

- A. A certified testing agency shall be retained by the Contractor to perform all required field-testing in accordance with ACI 301. Testing laboratory certification may be provided by Cement and Concrete Reference Lab (CCRL). All testing costs shall be incidental to the cost of the project.
 - 1. Testing agencies performing testing services on concrete materials shall meet the requirements of ASTM C 1077.
 - 2. Field-testing of concrete shall be performed by an ACI Certified Concrete Field Testing Technician – Grade I.
- B. Contractor shall submit proposed mix design of each class of concrete to the Project Manager for approval prior to commencement of work.
- C. Contractor shall inform the Project Manager 48 hours in advance of field-testing to allow for witnessing of testing.
- D. The Testing Agency shall collect strength cylinders from one batch in every 20 cubic yards of concrete placed, or once a day when less than 20 cubic yards is placed, and perform the tests specified herein. Samples for Acceptance Testing are to be taken at the discharge from the transit mixer, except when using concrete pumps or conveyors to transport concrete to its final placement location. When pumps or

conveyors are used, the samples for acceptance tests shall be taken at the end of the pipe or last conveyor belt.

1. Concrete shall be sampled in accordance with ASTM C-172.
 2. Temperature of concrete shall be recorded in accordance with ASTM C 1064.
 3. Slump test shall be performed in accordance with ASTM C 143.
 4. Air content test shall be performed in accordance with ASTM C 231, pressure method.
 5. Six (6) concrete strength test cylinders shall be taken in accordance with ASTM C 31.
- E. The Testing Agency shall test the strength test cylinders in accordance with ASTM C 39 at 7 days and 28 days.

1.10 CONCRETE ACCEPTANCE CRITERIA

A. Fresh Concrete

1. Temperature - Less than 90 degrees F.
2. Slump - per Section 2.6.
3. Air content - per Section 2.6.
4. Drum revolution counter - 100 to 300 revolutions within 1-1/2 hours after initial mixing.

B. Strength

1. Concrete strength is satisfactory if the average of all sets of 3 consecutive strength test results equal or exceed the specified 28 day strength f'_c and no individual strength test result falls below the specified 28 day strength f'_c by more than 500 psi.

C. Appearance

1. Free from honeycombs and embedded debris.

D. Construction requirements

1. Conforming to required lines, details, dimensions and tolerances specified for construction.

1.11 DEFECTIVE CONCRETE

- A. Defective concrete is concrete not conforming to acceptance criteria in Section 3.10.
- B. Contractor shall replace defective concrete not meeting strength criteria at Contractor's expense. The concrete's in-place strength may be evaluated by testing 3 core samples for each strength test, wherever LAC-cured cylinders were more than 500 psi below f'_c , all in accordance with ACI 301 and ASTM C42. Core

holes shall be filled in accordance with ACI 301. Testing shall be completed at no additional cost to the Owner.

- C. Defective concrete not meeting appearance criteria shall be replaced or, where approved by the Project Manager, repaired at Contractor's expense.
- D. Concrete not in conformance with details, tolerances, and other construction requirements shall also be replaced at Contractor's expense.

END OF SECTION

SECTION 702 GROUT

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Furnish all labor, materials, equipment, and incidentals required, and install grout complete as shown on the Drawings and as specified herein.

1.2 RELATED WORK IN OTHER SECTIONS

- A. Section 401 Underground Ductbank Systems
- B. Section 502 Sewer Manholes
- C. Section 601 Water Systems
- D. Section 701 Reinforced Concrete

1.3 SUBMITTALS

- A. Contractor shall submit, in accordance with Section 102 Submittals Procedures, shop drawings and product data showing materials of construction and details of installation for:
 - 1 Commercially manufactured non-shrink cementitious grout: The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, and conformity to required ASTM standards and Material Safety Data Sheet.
 - 2 Commercially manufactured non-shrink epoxy grout: The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, and conformity to required ASTM standards and Material Safety Data Sheet.
 - 3 Cement grout: The submittal shall include the type and brand of the cement, the gradation of the fine aggregate, and product data on any proposed admixtures and the proposed mix of the grout.

1.4 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 2. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes

3. ASTM C827 - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures
 4. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non shrink)
- B. U.S. Army Corps of Engineers Standard (CRD)
1. CRD C-621 - Corps of Engineers Specification for Non-shrink Grout
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.
- 1.5 QUALITY ASSURANCE
- A. Qualifications
1. Grout manufacturer shall have a minimum of 10 years experience in the production and use of the type of grout proposed for the work.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Delivery of materials to the jobsite shall be made in original, unopened packages, clearly labeled with the manufacturer's name, product identification, batch numbers, and printed instructions.
- B. Materials shall be stored in full compliance with the manufacturer's recommendations. Total storage time from date of manufacture to date of installation shall be limited to 6 months or the manufacturer's recommended storage time, whichever is less.
- C. Material that becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material at no additional expense to the Department of Public Utilities.
- D. Non-shrink cement-based grouts shall be delivered as pre-blended, pre-packaged mixes that require only the addition of water to be applied.
- E. Non-shrink epoxy grouts shall be delivered as pre-measured, pre-packaged, three component systems that require only blending as directed by the manufacturer before application.
- 1.7 DEFINITIONS
- A. Non-shrink Grout: A commercially manufactured product that does not shrink in either the plastic or hardened state, is dimensionally stable in the hardened state and bonds to clean prepared surfaces.

PART 2 PRODUCTS

2.1 GENERAL

- A. Like materials shall be the products of one manufacturer or supplier in order to provide standardization of appearance.

2.2 MATERIALS

A. Non-Shrink Cementitious Grout

- 1. Non-shrink cementitious grouts shall meet or exceed the requirements of ASTM C1107, Grades B or C and CRD C-621. Grouts shall be portland cement based, contain a pre-proportioned blend of selected aggregates and shrinkage compensating agents, and shall require only the addition of water. Non-shrink cementitious grouts shall not contain expansive cement or metallic particles. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827. General purpose non-shrink cementitious grout shall be: SikaGrout 212 by Sika Corp.; Euco NS Grout by The Euclid Chemical Co.; FX-228 by Fox Industries; UNIGROUT by Universal Building Products; Five Star Grout by Five Star Products; or equal.

B. Non-Shrink Epoxy Grout

- 1. Non-shrink epoxy-based grout shall be a pre-proportioned, three-component, 100 percent solids system consisting of epoxy resin, hardener, and blended aggregate. It shall have a compressive strength of 13,600 psi in 7 days when tested in conformity with ASTM C579 and have a maximum thermal expansion of 18×10^{-6} when tested in conformity with ASTM C531. The grout shall be Five Star HP Epoxy Grout by U.S. Grout Corp.; Sikadur 42 Grout-Pak by Sika Corp.; High Strength Epoxy Grout by the Euclid Chemical Co.; or equal.

C. Cement Grout

- 1. Cement grouts shall be a mixture of one-part portland cement (conforming to ASTM C 150, Types I, II, or III) and one- to two-parts sand (conforming to ASTM C33) with sufficient water to place the grout. The water content shall be sufficient to impart workability to the grout but not to the degree that it will allow the grout to flow.

D. Water

- 1. Only potable water shall be used in the preparation of grouts for application.

PART 3 EXECUTION

3.1 PREPARATION

- A. Grout shall be placed over cured concrete that has attained its full design

strength unless otherwise approved by the Department of Public Utilities engineer.

- B. Concrete surfaces to receive grout shall be clean and sound; free of ice, frost, dirt, grease, oil, curing compounds, laitance, and paints; free of all loose material or foreign matter, all of which may affect the bond or performance of the grout.
- C. Concrete surfaces shall be roughened by chipping, sandblasting, or other mechanical means to ensure bond of the grout to the concrete. Loose or broken concrete shall be removed. Irregular voids or projecting coarse aggregate need not be removed if they are sound, free of laitance, and firmly embedded into the parent concrete.
- D. Air compressors used to clean surfaces in contact with grout shall be the oil-less type or equipped with an oil trap in the airline to prevent oil from being blown onto the surface.
- E. Concrete surfaces shall be washed clean and then kept moist for at least 24 hours prior to the placement of cementitious or cement grout. Saturation may be achieved by covering the concrete with saturated burlap bags, use of a soaker hose, flooding the surface, or other method acceptable to the Project Manager. Upon completion of the 24-hour period, visible water shall be removed from the surface prior to grouting. The use of an adhesive bonding agent in lieu of surface saturation shall only be used when approved by the Project Manager for each specific location of grout installation.
- F. Epoxy-based grouts do not require the saturation of the concrete substrate. Surfaces in contact with epoxy grout shall be completely dry before grouting.
- G. Grout forms or other leak proof containment shall be constructed as required. Forms shall be lined or coated with release agents recommended by the grout manufacturer.
- H. Grout forms shall be of adequate strength, securely anchored in place, and shored to resist the forces imposed by the grout and its placement.
- I. Equipment shall be supported during alignment and installation of grout by shims, wedges, blocks, or other approved means. The shims, wedges, and blocking devices shall be prevented from bonding to the grout by appropriate bond breaking coatings and removed after grouting unless otherwise approved by the Project Manager.

3.2 INSTALLATION - GENERAL

- A. Mix, apply, and cure products in strict compliance with the manufacturer's recommendations and this section.
- B. Have sufficient manpower and equipment available for rapid and continuous mixing and placing. Keep all necessary tools and materials ready and close at hand.

- C. Maintain temperature of the grout during and after grouting as recommended by the grout manufacturer.
- D. Take special precautions for hot weather or cold weather grouting as recommended by the manufacturer when ambient temperatures and/or the temperature of the materials in contact with the grout are outside of the 60 and 90 degrees Fahrenheit range.
- E. Install grout in a manner that will preserve the isolation between the elements on either side of the joint where grout is placed in the vicinity of an expansion or control joint.

3.3 INSTALLATION - CEMENT GROUTS AND NON-SHRINK CEMENTITIOUS GROUTS

- A. Mix in accordance with manufacturer's recommendations.
- B. Avoid mixing by hand. Mixing in a mortar mixer (with moving blades) is recommended. Before mixing, wet the mixer and empty excess water. Add pre-measured amount of water for mixing, followed by the grout. Begin with the minimum amount of water recommended by the manufacturer and then add the minimum additional water required to obtain workability. Do not exceed the manufacturer's maximum recommended water content.
- C. Placements greater than 3" in depth shall include the addition of clean washed pea gravel to the grout mix when approved by the manufacturer. Comply with the manufacturer's recommendations for the size and amount of aggregate to be added.
- D. Place grout into the designated areas in a manner that will avoid segregation or entrapment of air. Do not vibrate grout to release air or to consolidate the material. Placement should proceed in a manner that will ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces.
- E. Place grout rapidly and continuously to avoid cold joints. Do not place cement grouts in layers. Do not add additional water to the mix after initial stiffening.
- F. Begin curing immediately after form removal, cutback, and finishing. Keep grout moist and within its recommended placement temperature range for at least 24 hours after placement or longer if recommended by the manufacturer. Saturate the grout surface by use of wet burlap, soaker hoses, ponding, or other approved means. Provide sunshades as necessary. If drying winds inhibit the ability of a given curing method to keep grout moist, erect wind breaks until wind is no longer a problem or curing is finished.

3.4 INSTALLATION - NONSHRINK EPOXY GROUTS

- A. Mix in accordance with the procedures recommended by the manufacturer. Do not vary the ratio of components or add solvent to change the consistency of the grout

mix. Do not overmix. Mix full batches only to maintain proper proportions of resin, hardener, and aggregate.

- B. Monitor ambient weather conditions and contact the grout manufacturer for special placement procedures to be used for temperatures below 60 or above 90 degrees F.
- C. Place grout into the designated areas in a manner that will avoid trapping air. Placement methods shall ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces.
- D. Finish grout by puddling to cover all aggregate and provide a smooth finish. Break bubbles and smooth the top surface of the grout in conformity with the manufacturer's recommendations.
- E. Epoxy grouts are self-curing and do not require the application of water. Maintain the formed grout within its recommended placement temperature range for at least 24 hours after placing, or longer if recommended by the manufacturer.

3.5 SCHEDULE

- A. The following list indicates where the particular types of grout are to be used:
 - 1. General purpose non-shrink cementitious grout: Use at all locations where non-shrink grout is called for on the Drawings.
 - 2. Non-shrink epoxy grout: Use for the setting of anchor rods, anchor bolts and reinforcing steel in concrete and for all locations specifically indicated to receive epoxy grout.
 - 3. Cement grout: Only use where cement grout is called for on the Drawings. It shall not be used when non-shrink grout is specifically called for on the Drawings.

END OF SECTION