



SAN JUAN COUNTY
CONSTRUCTION CONTRACT BID SPECIFICATIONS

Prepared by:

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The technical material and data contained in these Specifications were prepared under the supervision and direction of the undersigned, whose seal as a Professional Engineer, licensed to practice in the State of New Mexico, is affixed below.

**SAN JUAN COUNTY
CONSTRUCTION CONTRACT BID SPECIFICATIONS
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San Juan County
Bridge 8111 Replacement on San Juan County Road 3500
Section 1

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the **Bridge 8111 Replacement on San Juan County Road 3500** will be received, by **San Juan County** at the office of the 213 S. Oliver Street, Aztec, NM., until **3:00 pm** local time on **November 20, 2024** at which time the Bids received will be publicly opened and read. The Project consists of constructing **the demolition and construction of a bridge crossing the Flora Vista Arroyo, roadway improvements, signing, striping, grading, riprap, and other work as indicated in the bid tab.**

Bids will be received for a single prime Contract. Bids shall be on a unit price basis, as indicated in the Bid Form.

The Bid and Contract Documents may be obtained on the San Juan County Website. When utilizing the County's website, please complete the Acknowledgement Form that is posted within the Project Manual so you can be listed as Plan Holder, and will automatically receive addendums, if issued. You are reminded that you are solely responsible for checking the County's website for updates. Please feel free to visit our Website, www.sjcounty.net, Click on the "Bids, Proposals & Vendors" icon to access the bid. Hard copies of the project will NOT be provided.

A pre-bid conference will be held at **2:00 PM** local time on **October 23, 2024** at the San Juan County Purchasing Office, 213 S. Oliver Drive, Aztec, NM 87410 Attendance at the pre-bid conference is highly encouraged but is not mandatory.

Bid security shall be furnished in accordance with the Instructions to Bidders.

San Juan County reserves the right to issue addenda to the Specifications during the advertising period as provided in the Contract Documents. A distribution list of those who receive the RFB and all Addenda will be maintained throughout the procurement process and will become part of the procurement file.

Bidders shall be licensed as Contractors in the State of New Mexico at the time of Bid submittal and must include their license number and Contractor classifications held in the prescribed place on the bid form.

IN-STATE RESIDENT CONTRACTOR PREFERENCE. To be eligible for the 5% resident contractor's preference, the contractor shall include a copy of their certificate with their bid and in-state resident preference number on the Bid Offer Page, pursuant to Section 13-4-2 NMSA 1978. Each Bidder may obtain a New Mexico In-State Resident Contractor Preference Certificate Number through the State of New Mexico, Department of Taxation and Revenue, 505-827-0951.

RESIDENT VETERAN CONTRACTOR PREFERENCE. To be considered for the 10% resident veteran contractor preference, the contractor shall include a copy of their certificate with their bid and include their resident veteran preference number on the Bid Offer Page, pursuant to Section 13-4-2 NMSA 1978. Each contractor may obtain a Resident Veteran Contractor Preference Certificate Number through the State of New Mexico, Department of Taxation and Revenue, 505-827-0951. This preference is separate from the in-state preference and is not cumulative with that preference.

Questions regarding the bidding documents shall be submitted through T.Y. Lin International, 500 4th Street NW, Suite 403F, Albuquerque, NM 87102 or howard.cake@tylin.com Attention: Howard Cake, P.E.

The last day for questions is close of business (5:00 pm local time) November 11, 2024.

Owner: San Juan County
Diana Chapman, Chief Procurement Officer
Phone: 505-334-4551

NIGP Code 913.13

LEGAL NOTICE: Publish:

+ + END OF ADVERTISEMENT FOR BIDS + +

San Juan County
Bridge 8111 Replacement on San Juan County Road 3500
Section 2

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – Refers to San Juan County Public Works.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the location and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid the following additional information:
- A. Evidence of Bidder's authority to do business in New Mexico.
 - B. Bidder's New Mexico contractor license number.
 - C. Bid Guaranty
 - D. Affidavit of Bidder
 - E. Non-Debarment Certification
 - F. Pay Equity Reporting Acknowledgement
 - G. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."
 - H. Other required information regarding qualifications
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER’S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

4.03 *Owner’s Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.04 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER’S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs;

- E. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- F. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- G. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- H. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. Bids submitted without the required bid security will not be considered.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 60 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The number of days within which, the Work is to be substantially completed, and completed and ready for final payment, are set forth in Article 6 of the Unit Price Bid.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in Article 6 of the Unit Price Bid.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.02 With the Bid, the Bidder shall submit a list of all the Subcontractors proposed for the project. the Work:
- If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 12.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, unit price item, and unit price item listed therein.
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.
- 13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.
- 13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in New Mexico.

ARTICLE 14 – BASIS OF BID

- 14.01 *Unit Price*
- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.02 Allowances

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title, the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED."
- 15.02 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports

to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

19.03 Evaluation of Bids

A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within forty-five days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – PREFERENCES

22.01 **IN-STATE RESIDENT CONTRACTOR PREFERENCE.** To be eligible for the 5% resident contractor’s preference, the contractor shall include a copy of their certificate with their bid and in-state resident preference number on the Bid Offer Page, pursuant to Section 13-4-2 NMSA 1978. Each Bidder may obtain a New Mexico In-State Resident Contractor Preference Certificate Number through the State of New Mexico, Department of Taxation and Revenue, 505-827-0951.

22.02 **RESIDENT VETERAN CONTRACTOR PREFERENCE.** To be considered for the 10% resident veteran contractor preference, the contractor shall include a copy of their certificate with their bid and include their resident veteran preference number on the Bid Offer Page, pursuant to Section 13-4-2 NMSA 1978. Each contractor may obtain a Resident Veteran Contractor Preference Certificate Number through the State of New Mexico, Department of Taxation and Revenue, 505-827-0951. This preference is separate from the in-state preference and is not cumulative with that preference.

San Juan County
Section 3
Minimum Wage Rates

- (a) The minimum wages to be paid to the various classes of mechanics and laborers engaged by the Contractor and Subcontractors for Work under this Contract including any additional, omitted or changed work, shall not be less than the amount as determined and established by the Labor and Industrial Division of the New Mexico Department of Workforce Solutions as provided by Section 13-4-11, N.M.S.A.1978 and in full force and effect, without exception, on the date of the Contract and during the lifetime of this Contract.
- (b) The minimum wage rates, if any, specified for apprentices shall apply only to persons working with the tools of the trade that they are learning, and under the direct supervision required by law, the number of apprentices in each trade or occupation employed by the Contractor or any Subcontractor shall not exceed the number permitted under the usual practice prevailing between Trade Unions and Employers Association of the respective trades or occupations.
- (c) Extra Work - Minimum Wage. In case San Juan County orders the Contractor to perform extra work or additional work which may make it necessary for the Contractor or any Subcontractor under him to employ, in the performance of such work, any person in any trade or occupation for which no minimum wage rate is specified, San Juan County will include in the Contract Change Order for such extra or additional work the minimum wage rate for such trade or occupation, and insofar as such extra or additional work is concerned, there shall be paid each employee engaged in the work in such trade or occupation, not less than the minimum wage rate included.
- (e) Wage Underpayments and Adjustments. The Contractor agrees that, in case of underpayment of wages to any worker on the Project under this Contract, San Juan County may withhold out of payments due, an amount sufficient to pay such worker the difference between the wages required to be paid under his Contract and the wages actually paid such worker for the total number of hours worked and that San Juan County may disburse such amount so withheld by it, for and on account of the Contractor to the employee to which such amount is due. The Contractor further agrees that the amounts to be withheld pursuant to this paragraph may be in addition to the percentages to be retained by San Juan County pursuant to other provisions of this Contract.

A copy of the New Mexico State Office of the Labor Commissioner Minimum Wage Rates and Apprentices minimum wage scales in effect at the time of the Contract shall be posted or otherwise made available to the Contractor's employees at all times on the job.

A copy of each certified weekly payroll by the Contractor and each Subcontractor shall be provided to San Juan County. These payrolls shall be furnished no later than five working days after each payroll period. Such payrolls shall depict the decision number for this Project and the County in which the work is being performed.

The Contractor and all Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, age, religion, gender, national origin, sexual orientation, spousal affiliation, veteran status, mental or physical disability, or handicap.



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.



LABOR RELATIONS DIVISION
121 Tijeras Ave NE, Suite 3000
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

WWW.DWS.STATE.NM.US

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.



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: Bridge 8111 Replacement Project
Requested Date: 09/11/2024
Approved Date: 09/12/2024
Approved Wage Decision Number: SJ-24-2970-A

Wage Decision Expiration Date: 01/10/2025

2) Physical Location of Jobsite for Project:
Job Site Address: 26 Road 3500
Job Site City: Flora Vista
Job Site County: San Juan

3) Contracting Agency Name (Department or Bureau): San Juan County
Contracting Agency Contact's Name: Jaime Jones
Contracting Agency Contact's Phone: (505) 334-4548 Ext.

4) Estimated Bid Opening Date: 11/12/2024

5) Estimated total project cost: \$3,800,000.00
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?: Replacement of existing Bridge 8111 crossing the Flora Vista Arroyo on CR 3500.

6) Classifications of Construction:

Classification Type and Cost Total	Description
Highway/Utilities (A) Cost: \$3,800,000.00	The demolition of existing Bridge 8111 crossing the Flora Vista Arroyo on CR 3500 and construction of a replacement structure consisting of concrete box culverts, roadway improvements, signing, striping, grading, riprap, and other appurtenant installations.



**TYPE “A” –
STREET, HIGHWAY, UTILITY & LIGHT ENGINEERING**
Effective January 1, 2024

Trade Classification	Base Rate	Fringe Rate
Cement Mason	19.34	7.41
Drywall Finisher/Taper	26.40	8.86
Glazier/Fabricator	21.75	7.10
Painter- Commercial	21.00	5.75
Paper Hanger	21.00	5.75
Plumber/Pipefitter	40.74	15.90
Soft Floor Layers	21.00	9.20
Bricklayer/Block Layer/Stonemason		
Bricklayer/Block layer/Stonemason	27.03	10.99
Bricklayer/ Block layer/Stonemason – Curry, DeBaca, Quay and Roosevelt counties	23.10	8.89
Bricklayer/ Block layer/Stonemason – Dona Ana, Otero, Eddie, and Lea counties	29.56	14.10
Carpenter		
Carpenter/Lather	29.11	12.79
Carpenter- Los Alamos County	33.18	13.58
Electricians- Outside Classifications: Zone 1		
Ground man	26.32	12.79
Equipment Operator	37.76	17.13
Lineman	47.70	19.92
Journeyman technician	44.42	19.10
Cable Splicer	48.87	20.22
Electricians-Outside Classifications: Zone 2		
Ground man	26.32	12.79
Equipment Operator	37.76	17.13
Lineman	47.70	19.92
Journeyman technician	44.42	19.10
Cable Splicer	48.87	20.22

Trade Classification**Base Rate****Fringe Rate****Electricians-Outside Classifications: Los Alamos County**

Ground man	27.07	12.81
Equipment Operator	38.85	17.17
Lineman	48.95	20.24
Journeyman technician	45.70	19.42
Cable Splicer	53.75	21.44

Ironworker

Ironworker Journeyman	28.49	18.71
Probationary Ironworker	22.79	18.71

Laborers

Group I – unskilled	16.60	7.30
Group II – semiskilled	17.60	7.30
Group III – skilled	18.10	7.30
Group IV – specialty	18.60	7.30

Operators

Group I	22.42	6.79
Group II	23.50	6.79
Group III	23.61	6.79
Group IV	24.09	6.79
Group V	24.21	6.79
Group VI	24.43	6.79
Group VII	24.62	6.79
Group VIII	25.33	6.79
Group IX	33.56	6.79
Group X	37.43	6.79

Truck Drivers

Group I-IX	19.75	9.15
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NOTE: All contractors are required to pay SUBSISTENCE, ZONE, AND INCENTIVE PAY according to the particular trade. More information available at <https://www.dws.state.nm.us/public-works>.

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the New Mexico Department of Workforce Solutions Labor Relations Division at (505) 841-4400 or visit us online at www.dws.state.nm.us.

**San Juan County
Section 4
Unit Price Bid**

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

San Juan County
213 S. Oliver Dr
Aztec, NM 87410

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs.

- E. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- F. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- G. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- I. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price:

Item No.	Description	Unit	Estimated Quality	Bid Unit Cost	Bid Price
107000	ENVIRONMENTAL COMMITMENTS	LS	LS		
201000	CLEARING AND GRUBBING	LS	LS		
203011	ENVIRONMENTAL CONSTRUCTION MONITORING	LS	LS		
203100	BORROW	C.Y.	6,700		
203200	UNSUITABLE MATERIAL EXCAVATION	C.Y.	800		
206000	UNSUITABLE MATERIAL EXCAVATION	C.Y.	350		
206100	SELECT BACKFILL MATERIAL	C.Y.	600		
207000	SUBGRADE PREPARATION	S.Y.	1,900		
303180	BASE COURSE 8"	S.Y.	1,800		
407000	ASPHALT MATERIAL FOR TACK COAT	TON	1		
408100	PRIME COAT MATERIAL	TON	3		
416107	MINOR PAVING TYPE I, HMA SP-IV	S.Y.	1,700		
502600	OBSTRUCTION REMOVAL	L.F.	365		
511030	STRUCTURAL CONCRETE, CLASS AA	C.Y.	630		
540060	REINFORCING BARS GRADE 60	LB	130,000		
547000	SAFETY AND ENVIRONMENTAL REQUIREMENTS	LS	LS		
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS		
601110	REMOVAL OF SURFACING	S.Y.	600		
602000	RIPRAP CLASS A	C.Y.	150		
602005	RIPRAP CLASS A (NON-ENCLOSED)	C.Y.	150		

602010	RIPRAP CLASS B	C.Y.	70		
602200	GABIONS	C.Y.	40		
603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	LS		
606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	365		
606052	END TREATMENT TL-2 END TERMINAL	EACH	2		
606055	END TREATMENT DRIVEWAY END ANCHOR	EACH	2		
617000	VIBRATION MONITORING	LS	LS		
617003	VIDEO RECORDING	LS	LS		
618000	TRAFFIC CONTROL MANAGEMENT	LS	LS		
621000	MOBILIZATION	LS	LS		
632000	CLASS A SEEDING	ACRE	1		
667110	MAIL BOX INSTALLATION-SINGLE	EACH	1		
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	L.F.	28		
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LS	LS		
703003	OBJECT MARKER TYPE 3	EACH	4		
704700	HOT THERMOPLASTIC PAVEMENT MARKINGS 4"	L.F.	1,210		
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	LS		
Base Bid – Total of all Unit Price Bid Items					\$

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

a) Lump Sum Price for Base Bid		\$ _____
b) Allowances:		
Construction Materials Testing		\$30,000.00
Asbestos Abatement		\$10,000.00
Total Allowances:		\$40,000.00
c) Subtotal – Base Bid (Line a) plus Allowances (Line f)		\$ _____
d) New Mexico Gross Receipts Tax (NMGRT)	6.6875%	\$ _____
e) Base Bid Total – Subtotal plus NMGRT		\$ _____

Dollars

(Base Bid Total amount written in words)

In-State Resident Contractor Preference (5%) \$ _____

Resident Veteran Contractor Preference (10%) \$ _____

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete within 365 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions. Contract Times commencement date negotiable to start at the beginning of the year 2025.
- 6.02 In addition, Bidder agrees to complete or correct all punch list items attached to the Certificate of Substantial Completion within 30 consecutive calendar days following the date of Substantial Completion.
- 6.03 As provided in the Special Provisions, Bidder further agrees to pay as liquidated damages the amount of \$500 for each consecutive calendar day beyond the agreed time that Substantial Completion is not achieved and \$500 for each consecutive calendar day beyond the agreed time that all punch list items are not completed or corrected.

6.04 Bidder agrees to the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

- A. Evidence of Bidder’s authority to do business in New Mexico.
- B. Bidder’s New Mexico contractor license number.
- C. Bid Guaranty
- D. Affidavit of Bidder
- E. Non-Debarment Certification
- F. Pay Equity Reporting Acknowledgement
- G. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, “Subcontractors, Suppliers, and Others.”

ARTICLE 8 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____

[Printed name] _____

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Contact Name and e-mail address: _____

Bidder’s License No.: _____
(where applicable)

San Juan County
Bid Guaranty

Control Number ('CN'): F100370

BIDDER: _____ TELEPHONE: () _____
ADDRESS: _____

SURETY: _____
SURETY BUSINESS ADDRESS: _____

KNOWN ALL MEN by these presents that the Surety having its registered office at the above address are bound unto the San Juan County in the sum of five percent (5%) of the Total Bid Amount as shown on the Project Bid Schedule for which payment well and truly to be made to the San Juan County the Surety binds itself, its successors and assigns by these presents.

The Surety undertakes to pay the San Juan County up to the above amount upon receipt of the County's first written demand, without the County having to substantiate its demand, precluded in its demand the County will note that the amount claimed by the County is due to the Bidder failing to return the signed Contract Bonds within fifteen (15) Days of receiving the Contract. The Guaranty will remain in for up to 60 Days after Bid Opening or as it may be extended by the County, notice of which extension(s) to the Surety is hereby waived.

San Juan County
Affidavit of Bidder

BIDDER: _____ TELEPHONE: () _____
ADDRESS: _____

The Bidder shall execute this Certification of Bidder. I _____ hereby affirm per 23 C.F.R. § 635.112(f) (2009) and as a condition to the County's execution of this Contract that I have not either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the Bid for this Contract.

Further affiant sayeth not.

Title: _____

Bidder (print): _____

Bidder Signature: _____

STATE OF _____)

COUNTY OF _____)

SUBSCRIBED AND SWORN TO BEFORE ME ON THIS:

_____ day of _____ 2021

Notary Public

My Commission Expires: _____

Before Bid Opening, the Bidder shall submit this Affidavit of Bidder as part of the bid package.

Failure to comply with the submission of the Affidavit of Bidder shall result in the Bidder's Bid being rejected as non-responsive.

San Juan County
Non-Debarment Certification

Control Number ('CN'): F100370

BIDDER: _____ TELEPHONE: () _____
ADDRESS: _____

The Federal Highway Administration suspends or debar contractors to protect taxpayer dollars and the NMDOT is required to Award Contracts to responsible Bidders, The submission of the Bid is the Bidder's certification that neither it nor its principals are presently suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this Project by any federal department or agency. The Bidder further agrees that if it is the lowest Responsible Bidder and awarded the Contract then it shall comply with the following:

- 1, The Contractor shall verify through the SAM.gov website at <https://www.sam.gov/portal/SAM/###11> that its Subcontractor(s), at any tiers), is not presently suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in this Project. The result of this verification shall be provided in the COUNTY's permission to subcontract request form number A-1086 and A-1087; and
2. If circumstances change to render this certification inaccurate then the contractor shall provide the changed circumstances immediately in writing to the Project Manager,

If the Contractor knowingly makes a false certification the COUNTY may take available actions under the Contract,

Failure to acknowledge the terms and conditions above shall render the Bid non-responsive and the Bid shall be rejected.

I acknowledge

San Juan County
Pay Equity Reporting Acknowledgement
Control Number ("CN"): F100370

BIDDER: _____ TELEPHONE: () _____
ADDRESS: _____

Pre-Award

The State of New Mexico requires the lowest Responsible Bidder to, in order to contract with Executive Branch Agencies, including the COUNTY, comply with Executive Order 2009-049, To comply with the Executive Order, after receipt of the notice of preliminary award of contract, the lowest Responsible Bidder shall submit per the notice of preliminary award of contract either form PE10-249 or PE250 depending on its number of employees at the time it receives the notice of preliminary award of contract.

Failure of the lowest Responsible Bidder to comply with this Pay Equity Reporting Acknowledgement may constitute just cause for cancellation of the Award and the forfeiture of the Bid Guaranty.

Exemptions exist regarding compliance with the Executive Order. The Executive Order and required forms can be obtained from the following link:

http://www.generalservices.state.nm.us/statepurchasing/pay_equity.asp

Post-Award

If Contract Time extends beyond one (1) year from the date of the Notice to Proceed, then within ten Days of the annual anniversary date of the Notice to Proceed the Contractor shall submit to the Project Manager an updated form PE10-249 or PE250 depending on the number of employees it has at that time.

If at the expiration of Contract Time more than 180 Days has elapsed since submittal of the last PE 10-249 or PE250, the Contractor shall submit to the Project Manager an updated form PE 10-249 or PE250.

If a Subcontractor, at any tier performs ten percent or more of the Total Original Contract Amount and has ten or more employees or eight (8) employees in the same job classification then the Contractor shall submit to the Project Manager the PE 10-249 or PE250. The Contractor shall submit the appropriate form with the permission to subcontract package forms A-1086 or A-1087.

If a Subcontractor, at any tier, performs ten percent or more of the Total Original Contract Amount and during the performance of this Work grows to have ten or more employees or eight (8) employees in the same job classification then the Contractor shall immediately submit form PE 10-249 or PE250.

Subsequent form PE 10-249 or PE250 submittals, by the Contractor for its Subcontractors, at any tier, shall be due yearly on the anniversary date of the Project Manager's approval of the permission to subcontract package.

Failure of the Contractor to comply with this Pay Equity Reporting Acknowledgement shall result in the NMDOT exercising its remedies under the Contract.

I acknowledge

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between San Juan County (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Replacement of the bridge crossing the Flora Vista Arroyo on County Road 3500 as well as the roadway improvements, earthwork, riprap, striping, signing, and other related improvements as shown on the plans.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by T.Y. Lin International.

3.02 The Owner has retained T.Y. Lin International (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 365 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 30 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of

requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner **\$500.00** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **\$500.00** for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work other than Unit Price Work, a lump sum of: **\$100,000.00**.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
107000	ENVIRONMENTAL COMMITMENTS	LS	LS		
201000	CLEARING AND GRUBBING	LS	LS		
203011	ENVIRONMENTAL CONSTRUCTION MONITORING	LS	LS		
203100	BORROW	C.Y.	6,700		
203200	UNSUITABLE MATERIAL EXCAVATION	C.Y.	800		
206000	UNSUITABLE MATERIAL EXCAVATION	C.Y.	350		
206100	SELECT BACKFILL MATERIAL	C.Y.	600		
207000	SUBGRADE PREPARATION	S.Y.	1,900		
303180	BASE COURSE 8"	S.Y.	1,800		
407000	ASPHALT MATERIAL FOR TACK COAT	TON	1		
408100	PRIME COAT MATERIAL	TON	3		
416107	MINOR PAVING TYPE I, HMA SP-IV	S.Y.	1,700		
502600	OBSTRUCTION REMOVAL	L.F.	365		

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
511030	STRUCTURAL CONCRETE, CLASS AA	C.Y.	630		
540060	REINFORCING BARS GRADE 60	LB	130,000		
547000	SAFETY AND ENVIRONMENTAL REQUIREMENTS	LS	LS		
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS		
601110	REMOVAL OF SURFACING	S.Y.	600		
602000	RIPRAP CLASS A	C.Y.	150		
602005	RIPRAP CLASS A (NON-ENCLOSED)	C.Y.	150		
602010	RIPRAP CLASS B	C.Y.	70		
602200	GABIONS	C.Y.	40		
603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	LS		
606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	365		
606052	END TREATMENT TL-2 END TERMINAL	EACH	2		
606055	END TREATMENT DRIVEWAY END ANCHOR	EACH	2		
617000	VIBRATION MONITORING	LS	LS		
617003	VIDEO RECORDING	LS	LS		
618000	TRAFFIC CONTROL MANAGEMENT	LS	LS		
621000	MOBILIZATION	LS	LS		
632000	CLASS A SEEDING	ACRE	1		
667110	MAIL BOX INSTALLATION-SINGLE	EACH	1		
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	L.F.	28		
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LS	LS		
703003	OBJECT MARKER TYPE 3	EACH	4		
704700	HOT THERMOPLASTIC PAVEMENT MARKINGS 4"	L.F.	1,210		
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	LS		
Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities)					\$
NMGRT (6.6875%)					\$
Total Cost Including NMGRT, Base Bid, and Allowances					\$

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$_____.
- D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the ____ day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 100 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 5 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of 0 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
 - E. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 - G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 - H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
 - I. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

- 9.01 *Contents*
- A. The Contract Documents consist of the following:
 - 1. This Agreement.
 - 2. Performance bond.
 - 3. Labor and Material Bond.
 - 4. General Conditions
 - 5. Supplementary Conditions

6. Specifications as listed in the table of contents of the Project Manual.
 7. Drawings (not attached but incorporated by reference)
 8. Addenda
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

San Juan County
100 S. Oliver Drive
Aztec, NM 87410

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* Bridge 8111 Replacement on San Juan County Road 3500 at the Flora Vista Arroyo crossing.

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

(seal)

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

EJCDC® C-610, Performance Bond

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence,

to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

San Juan County
 100. S. Oliver Drive
 Aztec, NM 87410

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

_____ *(seal)*

Contractor's Name and Corporate Seal

_____ *(seal)*

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

**STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT**

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the 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 is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
 1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
 1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations 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).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

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3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors 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 other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

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maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- 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 Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
 - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
 - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
 - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
 - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to 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 not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for 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 Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
 1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of 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.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 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 Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. 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 be 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, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
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 the 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 Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be 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, use, and other similar taxes related to the Work, and for which Contractor is liable, as 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 of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

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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 Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety 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 branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. 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.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner 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, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but 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.

- D. 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 Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested 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 Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer'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 is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment 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 for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall 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.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. 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, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract EJCDC- C0700, 2013 Edition and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 5 AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS SECTION 5.07 HAZARDOUS ENVIRONMENTAL CONDITIONS AT SITE

Paragraph 5.07(I) is deleted to the extent that it is prohibited by New Mexico law.

ARTICLE 6 BONDS AND INSURANCE SECTION 6.01 PERFORMANCE, PAYMENT, AND OTHER BONDS

Paragraphs G, H, I, and J shall be inserted in Section 6.01:

- G. The cost of bonds shall be included in the Contract Sum. The Contractor shall deliver the performance and payment bonds to the Owner not later than ten (10) days after the bid is awarded to the Contractor, or, if the Work is to be commenced prior thereto, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bond will be furnished. In addition to being U.S. Treasury listed, each surety shall be licensed in New Mexico and have an A.M. Best rating of A minus VII or better.
- H. **Subcontractor shall provide to the General Contractor a Performance and Payment Bond on a New Mexico public works project if the Subcontractor's Contract for work to be performed on the project is one hundred twenty-five thousand dollars (\$125,000) or more pursuant to NMSA 1978, § 13-1-148.1 (2007).** A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond. Each Surety must be U.S. Treasury listed, licensed in New Mexico and have an A.M. Best rating of A minus VII or better.
- I. In the event that a change order is executed that increases the Contract Sum by 25% or more, the performance and payment bonds shall be revised to an amount to equal one hundred percent (100%) of the revised Contract Sum. The revised bonds shall meet the same requirements as Paragraphs A and B above.
- J. The Contractor shall use the 2010 AIA A312 form or the 2013 EJCDC C-610 form for execution of Performance Bonds, or the 2010 AIA A312 or 2013 EJCDC C-615 2013 for execution of Payment Bonds.

ARTICLE 6 BONDS AND INSURANCE SECTION 6.03 CONTRACTOR'S INSURANCE

Section 6.03 is hereby amended by inserting the following insurance requirements:

- C. Liability insurance shall include all major divisions of coverage and be on a comprehensive through completed operations basis including:

- .1 Premises and Operation (including X, C, and U coverages as applicable).
 - .2 Independent Contractors' Protective.
 - .3 Products and Completed Operations.
 - .4 Personal Injury Liability with Employment Exclusions deleted.
 - .5 Broad Form Property Damage including Completed Operations.
 - .6 Owned, non-owned, and hired motor vehicles, liability symbol 1.
- D. The insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverage, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment. The Owner shall be named as an additional insured by endorsement to the Contractor's General Liability and Automobile Liability policies.
- E. If any of the foregoing insurance coverage is required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief. If the insurance is written on the Comprehensive General Liability policy form, the form ("Certificate of Insurance") shall be ACORD Form 25. **The certificate shall show the Owner as an additional insured.**
- F. Consistent with the New Mexico Tort Claims Act, the insurance shall be written for not less than the limits of liability specified in the following Clauses, or required by law, whichever coverage is greater:
- .1 Worker's Compensation:
 - a) State: Statutory
 - b) Employees Liability:
 - \$1,000,000 per accident
 - \$1,000,000 Disease, Policy Limit
 - \$1,000,000 Disease, Each Employee
 - .2 Comprehensive or Commercial General Liability (including Premise-Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):
 - a) Bodily Injury and Property Damage:
 - \$1,000,000, combined single limit each Occurrence
 - \$2,000,000, general aggregate (if applicable)
 - b) Products and Completed Operation to be maintained for two years after final payment.
 - .3 Contractual Liability: Bodily Injury and Property Damage: \$1,000,000, combined single limit each occurrence.
 - .4 Personal Injury, with Employment Exclusion deleted: \$1,000,000, aggregate.
 - .5 Business Auto Liability (including owned, non-owned, and hired vehicles): Bodily Injury and Property Damage: \$1,000,000, each occurrence.

.6 If the General Liability coverage is provided by a Commercial Liability policy, the:

- a) General Aggregate shall be not less than \$2,000,000 and it shall pertain to this project only.
- b) The Fire Damage Limit shall be not less than \$50,000 on any one fire.
- c) The Medical Expense Limit shall be not less than \$5,000 on any one person.

**ARTICLE 6
BONDS AND INSURANCE
SECTION 6.05
PROPERTY INSURANCE**

Subparagraph A(14) is inserted into Section 6.05 after Subparagraph A(13):

14. Property insurance shall be maintained, unless otherwise agreed in writing by all persons and entities who are the beneficiaries of such insurance, during the CONTRACT TIME until work is accepted by Owner. The policy shall also contain Completed Operations coverage, which coverage shall survive the acceptance of the work for a period of not less than two (2) years. In addition to the requirements described in Subparagraph 2, the property insurance shall provide extended coverage against the perils of fire, and shall cover reasonable compensation for Engineer's and Contractor's services and expenses required as a result of such insured loss. If the property insurance requires deductibles, the CONTRACTOR shall pay costs not covered because of such deductibles.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.01
PROGRESS SCHEDULE**

Add the following Paragraphs C, D and E to Section 7.01:

- C. The Owner may require the Contractor to take such measures or adopt such methods as may be necessary in the Owner's opinion to obtain and maintain satisfactory progress when, in the Owner's judgment, the Work is not proceeding in accordance with the approved progress schedule or otherwise at a reasonable rate to achieve Substantial Completion within the time frame set by the Contract Documents. The Contractor shall not receive any additional compensation if the Owner imposes such a requirement. The failure of the Owner to require such measures pursuant to this Paragraph shall not relieve the Contractor of his obligation to secure the rate of progress necessary to complete the Work within the time required of the Contract Documents.
- D. In the event that the Contractor fails or, in the judgment of the Owner or Engineer fails to complete a critical portion of Work on time or to complete a contractual milestone or completion date as evidenced by the latest update of the Project Construction Schedule Report, the Owner shall have the right to impose any or all of the following options:
 - .1 Require the Contractor to substantiate his capability to "get back on schedule within ten (10) working days".
 - .2 Require the Contractor to increase his work force, work overtime, and/or extra shifts, and do whatever else is required by the Owner until Contractor gets back on schedule as established by the Project Construction Schedule Report (including any updates thereto), such measures being at no extra cost to Owner.

- .3 Withhold progress payment, or portions thereof, until such time as the Contractor returns to the approved schedule.
 - .4 Require the Contractor, Owner, or Engineer to contact the factory, plant or distribution center whose production or delivery schedule may be critical to the scheduled completion of a portion of the contract work, and expedite same, at no expense to the Owner. If costs are incurred in executing the requirements of this Subparagraph, whether by the Owner, or Engineer, the Contract Sum shall be decreased by the cost occasioned by such action and an appropriate Change Order shall be issued.
- E. The Contractor shall furnish such manpower, materials, facilities, and equipment and shall work such hours, including night shifts, overtime operations, and Sundays and/or Holidays, as may be necessary to ensure the progress and completion of both the Work and the Project as reflected by the currently updated Project Construction Schedule (as may be modified and approved from time to time). If either the Work or the Project actually in place falls behind, impacting the Substantial or Final Completion date of the project, as reflected by the currently updated Project Construction Schedule, the Contractor agrees that s/he will, as necessary, take some or all of the following actions at no additional cost to the Owner or Engineer, as required to substantially remedy, in the judgment of the Owner, the timely execution of Work on the Project:
- .1 Increase manpower in quantities and crafts as necessary;
 - .2 Increase the number of working hours per shift, shifts per working day, working days per week, the amount of equipment, or any combination of the foregoing; and/or
 - .3 Reschedule activities to achieve maximum practical concurrence of accomplishment; and
 - .4 The Owner may require the Contractor to submit a new schedule. If the revised schedule proposed is not satisfactory, the Owner may require revisions until it is determined to be satisfactory, in order to make up the difference in actual versus scheduled progress.
 - .5 Do whatever else is reasonably required by the Owner.
 - .6 Failure of the Contractor to substantially comply with the requirements of Article 7 shall be considered grounds for a determination by the Owner that the Contractor is in breach of this Contract by failing to prosecute the Work so as to ensure its completion and that of the Project within both the Contract Time and the updated Project Construction Schedule.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.02
LABOR, WORKING HOURS**

Add the following paragraph to Section 7.02:

C. Wage rates are required on this Project if the bid amount exceeds \$60,000. Employees of any Contractor or Subcontractor participating in the work shall be paid not less than the minimum wage rates of the State of New Mexico as published by the State Labor and Industrial Commission.

- .1 Pursuant to Section 13-4-11(A) NMSA 1978, the Contractor and subcontractors shall pay all mechanics and laborers employed on the site of the project unconditionally and not less often than once a week and without subsequent unlawful deduction or

rebate on any account, the full amounts accrued at time of payment computed at wage rates not less than those stated in the minimum wage rates issued for the project.

.2 Contractor shall comply fully with the requirements set forth in the Public Works Minimum Wage Act Policy Manual, 11 NMAC 1.1 et seq., and the Wage Decision Packet issued by the State of New Mexico Department of Workforce Solutions.

3 The General Contractor, Subcontractors and all tier Subcontractors must be registered with the Labor and Industrial Division in accordance with Public Works Minimum Wage Act, Section 13-4-13.1 NMSA 1978.

.4 **Contractor and all Subcontractors shall comply with the requirements listed in the Project Manual.**

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.06
CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

Paragraph M of Section 7.06 is amended by adding the following sentence: The Contractor shall, on a daily basis, coordinate and review each Subcontractor's work for compliance with Contract Documents.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.07
PATENT FEES AND ROYALTIES**

Paragraph B of Section 7.07 is deleted in its entirety pursuant to New Mexico law.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.10
LAWS & REGULATIONS**

Add the following Paragraphs D, E, and F to Section 7.10 to read as follows:

- D. The Contractor shall be licensed to execute the Work of this Contract in accordance with applicable licensing statutes of the State of New Mexico and other applicable regulatory agencies. The Contractor and his/her Subcontractors shall also comply with Federal, State, tribal and local regulations, as applicable. The Contractor shall comply with the Owner's policies and procedures regarding secure areas. The Contractor and his/her Subcontractors and their respective employees may be subject to search-and-security clearance.
- E. Notice is given that the Procurement Code, Sections 13-1-21 through 13-1-1997 NMSA, imposes civil and criminal penalties for its violation. In addition, New Mexico criminal statutes impose felony penalties for illegal bribes, gratuities and kickbacks.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.12
RECORD DOCUMENTS**

Add the following Paragraph B to Section 7.11:

- B. The Contractor shall, at the end of every week, or at other mutually agreed intervals submit Daily Reports to the Owner (by facsimile or original), a report stating: labor forces on-site, areas worked, any potential schedule or coordination problems, material deliveries received, site visitors, and other relevant information required by the Owner.

**ARTICLE 7
CONTRACTOR'S RESPONSIBILITIES
SECTION 7.12
SAFETY AND PROTECTION**

The Owner's safety program referenced in Paragraph 7.12(C) is as follows:

All Contractors and subcontractors shall comply with the San Juan County Safety and Compliance Contractor Safety Verification Program, a copy of which is available from the San Juan County Safety and Compliance Manager. Specific safety precautions and programs also include, but are not limited to, the following:

- .1 Contractor shall provide a Project-specific Safety Plan
- .2 Hard hats shall be worn at all times.
- .3 Safety glasses with side shields shall be worn at all times.
- .4 100 percent fall protection shall be employed when construction personnel are exposed to falls of 6-feet and greater.
- .5 Contractor shall be responsible for developing a Fire Protection Program (i.e., Hot Work Permit Program).
- .6 Contractor shall provide third-party inspections of cranes brought onto the Project site, prior to use.

Paragraph H is also added to Section 7.12:

- H. Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not to exceed 21 days after discovery. The notice shall provide sufficient details to enable the other party to investigate the matter. However, nothing in this Paragraph or in the Contract Documents shall be construed as waiving defenses available to the Owner under the common law or statutory doctrines of sovereign immunity. The Owner shall be responsible for Claims arising from personal injury or property damage only to the extent specifically required by the New Mexico Tort Claims Act N.M.S.A. 1978, Section 41-4-1 et seq. (as amended).

**ARTICLE 11
AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK
SECTION 11.04
CHANGE IN CONTRACT PRICE**

Subparagraph 11.04(C)(2) is deleted in its entirety since cost plus percentage contracts are prohibited by New Mexico law.

**ARTICLE 15
PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD
SECTION 15.08
CORRECTION PERIOD**

Add the following sentence at the beginning of Subparagraph 15.08(A):

Eleven (11) months after substantial completion, the Owner, Engineer and Contractor shall attend a walkthrough to inspect the Work. Any concerns will be addressed in writing to the Contractor. The Contractor shall correct the deficiencies as provided in § 15.08.

ARTICLE 16
SUSPENSION OF WORK AND TERMINATION
SECTION 16.02
OWNER MAY TERMINATE FOR CAUSE

Add the following Subparagraphs 5 and 6 to Paragraph 16.02(A):

5. In addition to the grounds for termination set forth elsewhere in the Bid Documents or in the Contract Documents, any Contract awarded may be terminated if sufficient appropriations or authorizations exist. San Juan County's decision concerning whether sufficient appropriations or authorizations exist will be final.
6. This contract may also be terminated pursuant to Section 13-4-13 NMSA 1978 in the event that the Director of the Labor and Industrial Division of the New Mexico Department of Labor finds that any laborer or mechanic employed on the site of the project has been, or is being paid as a result of a willful violation a rate of wages less than the rate of wages required by Section 13-4-11 NMSA 1978, provided written notice is given by Owner to the Contractor or subcontractor. A party receiving such notice shall have the right to appeal afforded by Section 13-4-13 NMSA 1978.

ARTICLE 17
FINAL RESOLUTION OF DISPUTES
SECTION 17.01
METHODS AND PROCEDURES

Claims Subject to Arbitration. If the parties agree, they may elect in writing to arbitrate a claim pursuant to Subparagraph 17.01(B)(1). Any Claim which the parties agree to arbitrate shall be arbitrated in accordance with the New Mexico Uniform Arbitration Act, N.M.S.A. 1978, Section 44-7A-1 *et seq.* (2001). A single arbitrator shall be appointed to hear the arbitration, and shall be selected by agreement of the parties. The arbitrator's decision shall be binding upon the parties. If the parties cannot agree on an arbitrator, then the arbitrator shall be selected by the Chief Judge of the Eleventh Judicial District Court, State of New Mexico. Notice of a request for arbitration shall be filed in writing with the other party of this agreement, and a copy shall be filed with the Engineer. The request shall be made within a reasonable time, but in no event shall the request for arbitration be made after the date when institution of legal or equitable proceedings based on such claims or controversies would be barred by the applicable statute of limitations.

ARTICLE 18
MISCELLANEOUS
SECTION 18.07
CONTROLLING LAW

The following Paragraph B is inserted into Section 18.07: B. Any action to enforce terms and conditions herein shall be brought only in the courts having jurisdiction in San Juan County, New Mexico.

ARTICLE 18
MISCELLANEOUS
SECTION 18.09
SOVEREIGN IMMUNITY FOR CERTAIN CLAIMS

The following Section 18.09 is inserted in Article 18:

Notwithstanding any contrary provision, no provision contained in the Contract Documents shall be construed as waiving defenses available to the Owner under the common law or statutory doctrines of sovereign immunity. The Owner shall be responsible for Claims arising from personal injury or property damage only to the extent specifically required by the New Mexico Tort Claims Act N.M.S.A. 1978, Section 41-4-1 et seq. (as amended).

END OF SUPPLEMENTARY CONDITIONS

SAN JUAN COUNTY

NMDOT SPECIAL PROVISIONS

The New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction, Edition 2019 or as periodically revised, are incorporated here by reference and shall govern the construction of roadway items for this project except where revised, amended or supplemented by the NMDOT Special Provisions, NMDOT Supplemental Specifications, or the San Juan County Special Provisions and Technical Provisions contained in this book. Where a conflict occurs between NMDOT and San Juan County Specifications, the County's Specifications shall control.

New Mexico Department of Transportation Standard Specifications, Special Provisions, and Supplemental Specification shall be interpreted using the following list. Reference listed to the right are to replace those on the left where those on the left appear in the text.

REFERENCE

REPLACE WITH

New Mexico Department of Transportation
Project Manager
Chief Highway Administrator
State
Engineer
Department
District Highway Engineer
District Construction Engineer

San Juan County PWD
County Project Manager
Public Works Director
County
Public Works Director
County
Public Works Director
County Project Manager

The following SPECIAL PROVISIONS shall supplement the above specifications:

SPECIAL PROVISIONS FOR SECTION 601: REMOVAL OF STRUCTURES AND OBSTRUCTIONS

The 2019 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

601.3.2.1 Bridge Deck Removal

601.3.2.1.1 Existing Bridge No. 8111

Existing Bridge No. 8111 is over the Flora Vista Arroyo and requires a bridge demolition and replacement. The new Bridge deck is to be constructed in phases and traffic is to be detoured in accordance with the Bridge Construction Staging as shown in the Plans. All Bridge structure elements to be removed and reconstructed shall be in accordance with the Bridge Construction Staging as shown in the Plans. The use of polyethylene tube coffer dams is required for the removal of the piers located in the waterway. Earthen coffer dams will not be allowed. Other methods may be approved but must minimize the impact to the Flora Vista Arroyo and protected species.

601.3.2.1.2 Bridge Structure Element Removal Plans

The Contractor shall submit complete Bridge structure element removal Plans for each Bridge structure element that is to be removed to the Project Manager for review and comment. The Bridge structure element removal Plans shall detail the procedures, sequences, and all features required to perform the removal in a safe and controlled manner.

The Bridge structure element removal Plan shall include, but not be limited to, the following:

1. The removal sequence, including staging of removal operations;
2. Equipment locations on the Structure during removal operations;
3. Methods and details for member or connection strengthening;
4. Methods and details for supporting or stiffening requirements;
5. Temporary support shoring or temporary bracing;
6. Details, locations, and types of protective covers and containment to be used;
7. Measures to assure that people, property, utilities, and improvements will not be endangered or damaged;
8. Calculations showing the existing AASHTOWare Bridge Rating model is available from the County for analysis;
9. Details and measures for preventing Material, Equipment and debris from falling into the Flora Vista Arroyo below and/or damaging existing and new Bridge components; and
10. Methods and description of hauling plan for removal of concrete and debris.

The Bridge structure element removal Plan shall be prepared and signed by a New Mexico licensed Professional Engineer (Professional Engineer). The Professional Engineer shall have at least ten (10) years experience and shall have been in responsible charge for at least three Bridge demolition projects. The design calculations shall be adequate to demonstrate the stability of the Structure during all stages of the removal operations. Calculations shall be provided for each stage of Bridge structure element removal and shall include dead and live load values assumed in the design of protective covers. At a minimum, a stage

shall be considered to be removal of the deck, in any span.

Temporary support shoring, temporary bracing, and protective covers, as required, shall be designed and constructed in accordance with Standard Specifications Section 511.3.2, "Temporary Works and Falsework". The Contractor shall submit the Bridge structure element removal Plans and all calculations to the Project Manager 30 Days prior to beginning any removal Work. The Contractor shall not commence Work until the Removal Plans have been approved by the Project Manager.

The assumed horizontal load to be resisted by the temporary support shoring and temporary bracing, for removal operations only, shall be the sum of the actual horizontal loads due to Equipment, construction sequence or other causes, and the wind loads shown on the Plans, but in no case shall the assumed horizontal load to be resisted in any direction be less than five percent (5%) of the total dead load of the structure element to be removed.

The Contractor's Professional Engineer shall be present at all times when Bridge structure element removal operations are in progress and shall inspect the Bridge structure element removal operation and report in writing on a daily basis the progress of the operation and the status of the remaining Structure. A copy of the daily report shall be available at the site of the Work at all times. Should an unplanned event occur or the Bridge operation deviate from the approved Bridge structure element removal Plan, the Contractor's Professional Engineer shall submit immediately to the Project Manager, for his review and approval, the procedure of operation proposed to correct or remedy any occurrence.

601.3.2.2 Special Site Conditions

The Contractor shall identify any special site conditions in the field that may impact the safe and controlled removal of a Bridge structure element and include Plans for mitigating those conditions on the Bridge structure element removal Plan. Special site conditions may include, but are not limited to the following:

1. Fracture-critical or non-redundant details and Bridge geometries;
2. Damaged or deteriorated portions of the Bridge deck;
3. Damaged or deteriorated Bridge girder members;
4. Damaged or deteriorated Bridge bearings and/or supports;
5. Debris or obstructions under the Bridge
6. Presence of asbestos, red lead, or other hazardous Materials; and
7. Active waterway under the bridge during construction.

Special site conditions shall be reviewed at the Pre-Construction Conference.

Add the following to **Section 601.5.1: Work Included in Payment:**

4. Bridge structure element removal Plan and all calculations stamped by a New Mexico licensed Professional Engineer including changes to the Bridge structure element removal Plan.

SAN JUAN COUNTY

SECTION 9

NMDOT SUPPLEMENTAL SPECIFICATIONS

The New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction, latest Edition, are incorporated here by reference and shall govern the construction of roadway items for this project except where revised, amended or supplemented by the Special Provisions or Supplemental Specifications.

New Mexico Department of Transportation Standard Specifications, Special Provisions, and Supplemental Specifications shall be interpreted using the following list. Reference listed to the right are to replace those on the left where those on the left appear in the text.

REFERENCE

REPLACE WITH

New Mexico Department of Transportation
Project Manager
Chief Highway Administrator
State
Engineer
Department
District Highway Engineer
District Construction Engineer

San Juan County PWD
County Project Manager
Public Works Director
County
Public Works Director
County
Public Works Director
County Project Manager

The following SUPPLEMENTAL SPECIFICATIONS shall supplement the above specifications:

SUPPLEMENTAL SPECIFICATIONS INDEX

No Supplemental Specifications to the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction are in effect at this time.



Consultants in Natural Resources and the Environment

Preconstruction Notification Bridge 8111 Replacement Project San Juan County, New Mexico

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ERO Project #23-225

February 22, 2024

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Preconstruction Notification Bridge 8111 Replacement Project San Juan County, New Mexico

February 22, 2024

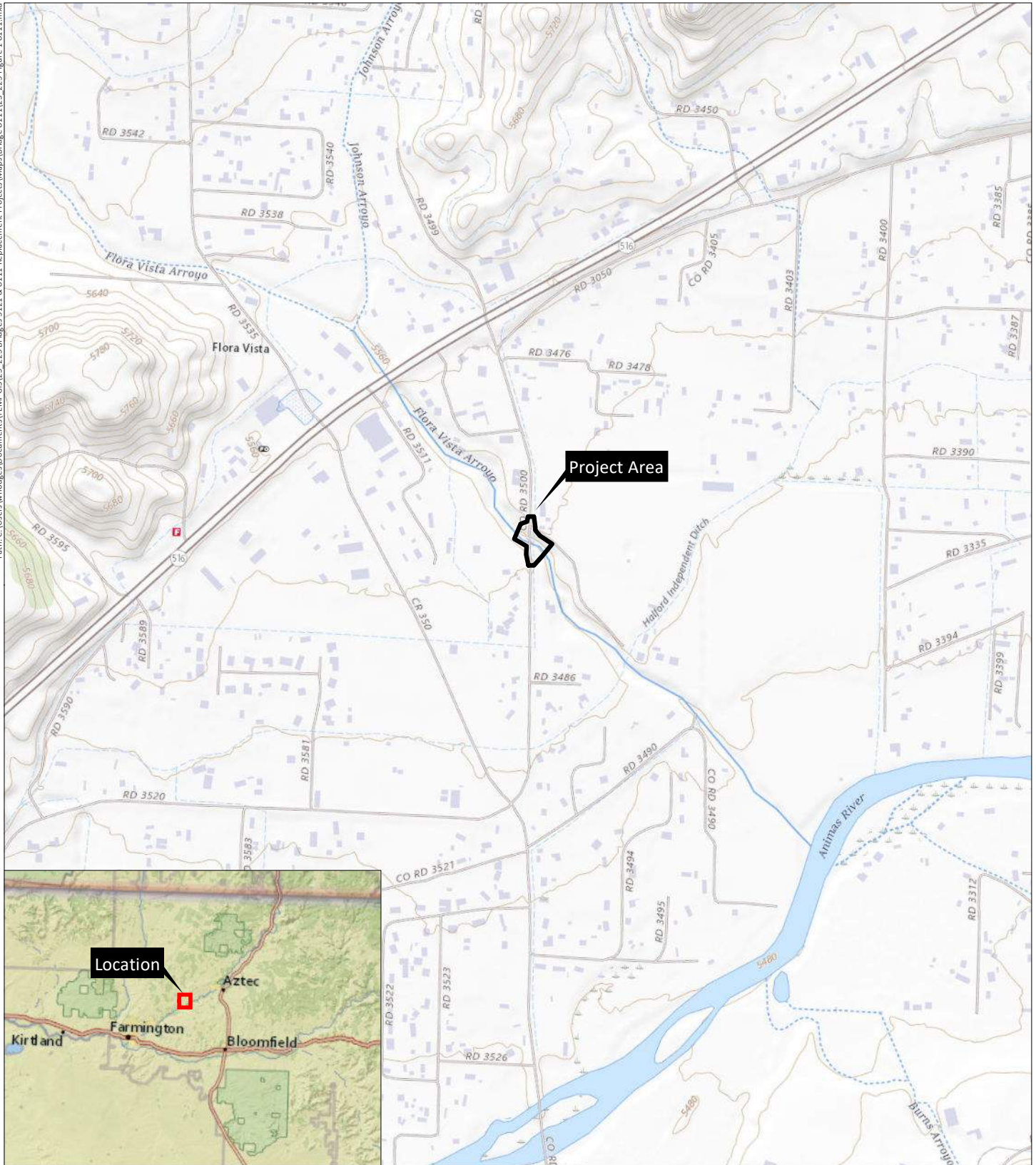
Project Description

San Juan County, New Mexico (County), in partnership with TYLin (Client), is proposing to improve the road and Bridge 8111 and refit the Arroyo Crossing with a high-flow culvert on County Road (CR) 3500 between CR 3490 to the south and NM-516 to the north in San Juan County, New Mexico (project area; Figure 1). The Bridge 8111 Project includes replacing existing structures and improving the road across Flora Vista Arroyo in the County. No standing live Rio Grande cottonwood trees (*Populus deltoides ssp. wislizeni*) would be removed for construction of the project. The project area consists of a total of approximately 1.06 acres of uplands (0.982 acres), wetlands (0.021 acres), and ordinary high water mark (OHWM; 0.057 acre). The total area of disturbance in the project area would be approximately 0.078 acre. The total disturbance from the proposed project to OHWM would be approximately 0.057 acre and 0.021 acre to wetlands. The project area would be accessed from CR 3500. Construction of the proposed project is scheduled to begin in 2024.

The proposed improvements would require minor impacts on Flora Vista Arroyo and abutting wetlands. The Client retained ERO Resources Corporation (ERO) to assist in requesting authorization for the project under the Nationwide Permit (NWP) system (33 Code of Federal Regulations [CFR] 330.6)—specifically, NWP 14 for Linear Transportation Projects.

Location

The project area occurs in Flora Vista Arroyo along CR 3500 in San Juan County, New Mexico (Figure 1). The project area of CR 3500 is approximately between CR 3490 to the south and NM-516 to the north. The legal description for the project area is Section 22, Township 30 North, Range 12 West of the New Mexico Principal Meridian in San Juan County, New Mexico. The UTM coordinates for the approximate center of the project area are NAD 83: Zone 12N; 760435mE, 4076681mN. The longitude/latitude of the project area is -108.080963°W/36.800172°N. The elevation of the project area is approximately 5,500 feet above sea level. Photos of the project area are included in Appendix A.



Bridge 8111 Replacement Project

Section 22, T30N, R12W; NM Principal Meridian
 UTM NAD 83: Zone 12N; 760435mE, 4076681mN
 Longitude 108.080963°W, Latitude 36.800172°N
 USGS Flora Vista, NM Quadrangle
 San Juan County, New Mexico

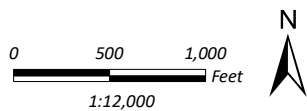


Figure 1
Vicinity Map

Prepared for: TYLin
 File: 23_225 Figure 1 8111.mxd (WH)
 November 7, 2023



Site Description

Land Use and Vegetation

The project area includes the right-of-way to the east and west of CR 3500 and Bridge 8111, which crosses Flora Vista Arroyo (Figure 1). The National Wetland Inventory Mapper (NWI; Service 2024) shows Flora Vista Arroyo as an intermittent and excavated, seasonally flooded drainage that flows from the uplands south into the Animas River. Portions of the banks of Flora Vista Arroyo adjacent to CR 3500 consist of graded slopes and concrete and wood retaining wall structures (Photo 1, Photo 2, and Photo 4) and a riparian terrace that experiences downcutting and erosion from heavy flows throughout the project area. Both banks of Flora Vista Arroyo contain narrow wetland fringes that are highly disturbed from bank slumping and sediment erosion. Weedy upland species, such as kochia (*Bassia scoparia*) and smooth brome (*Bromus inermis*) and scattered shrubs and grasses, including scattered tamarisk (*Tamarix* sp.), rubber rabbitbrush (*Ericameria nauseosa*), and western wheatgrass (*Pascopyrum smithii*), occur in the riparian area.

The riparian woodland species in the project area are dominated by mature Rio Grande cottonwood (*Populus deltoides wislizeni*) with an understory of willow (*Salix* sp.), scattered tamarisk, and Siberian elm (*Ulmus pumila*) (Photo 2). The riparian woodland on both sides of the arroyo has experienced human disturbances from vehicular traffic, utility development, and erosion, resulting in an open understory dominated by weedy grasses and forbs. Wetlands occur in narrow fringes intermittently along Flora Vista Arroyo and consist of palustrine emergent (PEM) wetland. The emergent wetlands are dominated by reed canarygrass (*Phalaris arundinacea*), cattail (*Typha latifolia*), and beaked sedge (*Carex utriculata*) (Photo 3).

CR 3500 is approximately 25 feet from the extent of the wetlands in the project area. Daytime traffic on CR 3500 is low to moderate. Noise from traffic on the road can be heard from the project area. The land surrounding the project area is generally mixed agricultural and residential development with some commercial structures. Gravel parking lots are located approximately 100 feet to the north on both sides of the Flora Vista Arroyo. An overhead transmission line is located in the east right-of-way paralleling CR 3500. Vehicles access the arroyo using a gravel drive adjacent to the northeast and southwest borders of the project area.

Soils Classification

The soils in the project area primarily consist of gently sloping Riverwash and Stumble loamy sand (Table 1). Stumble soils consist primarily of loamy sand and sandy clay loam on convex side slopes. This soil is derived from eolian deposits of sandstone (U.S. Department of Agriculture, Natural Resources Conservation Service [USDA, NRCS] 2023a).

Table 1. Project area soil classification.

Soil Unit Name	Percentage of Project Area (%)
Riverwash	80.3
Stumble sandy clay loam, gently sloping	19.7

Source: USDA, NRCS 2023a.

Wetlands and Other Waters

Methods

On September 20, 2023, ERO biologists Heidi McGrath, Erin Zarko, and Jared Watson surveyed the project area for potential isolated wetlands, jurisdictional wetlands, and other waters of the U.S. (WOTUS) (2023 survey). Prior to the 2023 survey, ERO reviewed U.S. Geological Survey (USGS) Flora Vista, NM quadrangle topographic maps and aerial photography to identify mapped streams and areas of open water that could indicate wetlands or WOTUS.

ERO conducted the wetland delineation following the methods for routine on-site wetland determinations as described in the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and used methods in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (U.S. Army Corps of Engineers [Corps] 2008) to determine wetland boundaries. The Corps defines wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR 328.2[c]). Wetland boundaries were determined by a visible change in vegetation community, soils, topographic changes, and other visible distinctions between wetlands and uplands.

The wetland indicator status of plant species was identified using the *National Wetland Plant List* (Corps 2020), taxonomy was determined using *Flora Neomexicana III* (Allred and Ivey 2020) and *A Field Guide to the Grasses of New Mexico* (Allred 2005), and nomenclature was determined using the *PLANTS Database* (USDA, NRCS 2023b). Where soil data were collected, a Munsell soil color chart was used to determine soil color.

Intermittent, ephemeral, and perennial drainages with characteristics of a defined streambed, streambank, OHWM, and other erosional features also were identified. The OHWM identifies the lateral jurisdictional limits of nonwetland WOTUS. Federal jurisdiction over nonwetland WOTUS extends to the OHWM, defined in 33 CFR 328.3 as “the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” The Corps defines “stream bed” as “the substrate of the stream channel between the OHWMs. The substrate may be bedrock or inorganic particles that range in size from clay to boulders.”

The boundaries of identified wetlands and other characteristics of potential WOTUS were mapped using a Trimble Global Positioning System (GPS) unit. Data were differentially corrected using the CompassCom base station. All differential corrections were completed using Trimble Pathfinder Office 5.9 software. GPS data were incorporated using ESRI ArcGIS Desktop software.

Wetland Classification

Delineated wetlands were classified according to the U.S. Fish and Wildlife Service's (Service) Cowardin classification system (Cowardin et al. 1979) combined with a hydrogeomorphic (HGM) approach (Brinson 1993). The HGM approach assesses the chemical, physical, and biological functions of wetlands based on geomorphic setting, water source, and hydrodynamics. HGM classes found in New Mexico are mineral soil flats, organic soil flats, riverine, lacustrine fringe, slope, and depressional. The Cowardin classification uses a hierarchical structure of systems, subsystems, and classes to classify both wetlands and deepwater habitats. Wetlands with persistent or nonpersistent vegetation are classified in the Cowardin system as palustrine, which typically includes wetlands referred to as marshes, fens, wet meadows, and sloughs. The palustrine system also includes small, shallow, permanent, or intermittent water bodies such as ponds. Palustrine wetlands may be situated shoreward of lakes and river channels, on river floodplains, in isolated catchments, or on slopes (Cowardin et al. 1979). Under the palustrine system, wetlands are classified as emergent (erect, rooted, herbaceous, and usually perennial hydrophytes that remain standing until at least the next growing season), scrub-shrub (woody vegetation less than 20 feet tall), or forested (woody vegetation 20 feet or taller). In wetlands where more than one wetland type occurs, the wetland type of the largest area is used. For example, an area that is predominantly palustrine scrub-shrub (PSS) wetlands but also contains a small amount of PEM wetlands would be categorized as PSS wetlands. During the wetland delineation, ERO classified the wetlands as PEM.

ERO also reviewed the proximity and potential surface water connection of wetlands to known jurisdictional WOTUS using aerial photo interpretation, landowner information, and information from the wetland survey. Potential WOTUS, including adjacent wetlands, identified in the project area are shown on Figure 2. Soil data points were collected from various locations in the project area to document the characteristics of uplands and wetlands and the transition areas between them. Each soil point (SP) was given a label that corresponds to a location shown on Figure 2 and routine wetland determination forms (Appendix B). The following sections contain information on potential surface water connections of wetlands and other waters in the project area.

Description of Wetlands and Other Waters

ERO assessed the project area for wetlands and other WOTUS as described below. Data were collected to document the characteristics of the uplands and wetlands and the transition areas between them (Figure 2). Table 2 provides a summary of the mapped WOTUS in the project area, including the Cowardin classification and HGM class for each feature. ERO mapped 0.057 acres of open water and 0.021 acres of wetlands during the 2023 survey.

36.801031°
-108.08189°



36.799268°
-108.079978°

Bridge 8111 Replacement Project

- Soil Pit
- Ordinary High Water Mark (0.057 ac)
- Wetland (0.022 ac)
- Project Area/Delineation Limits (1.06 ac)

Image Source: Airbus© April 27, 2023

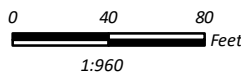


Figure 2 Existing Conditions

Prepared for: TYLin
File: 23_225 Figure 2 8111.mxd (WH)
February 20, 2024



Streams and Open Water

Under existing regulations, waters tributary to navigable waters with a direct surface connection are considered WOTUS and are subject to the Corps’ jurisdiction (jurisdictional). The Flora Vista Arroyo is shown on the USGS Flora Vista, NM topographic quadrangle and in the National Hydrography Dataset as an intermittent seasonally flooded stream with a downstream connection to the Animas River, and a small flow was observed during the 2023 site visit. Average mean monthly flows range from 0 cubic feet per second (cfs) in January to a high of approximately 1 cfs in August through October, with an annual mean flow of less than 1 cfs. ERO mapped 0.057 acres of stream channel in the project area during the 2023 survey (Figure 2).

Wetlands

Jurisdictional wetlands meet the Corps’ definition of wetlands and are adjacent, neighboring, or have a surface tributary connection to interstate or navigable WOTUS. The majority of the wetlands along Flora Vista Arroyo consist of emergent wetlands that occur in narrow fringes along the arroyo (Photo 1 and Photo 3). ERO mapped 0.021 acres of wetlands in the project area during the 2023 survey (Figure 2).

Table 2. Wetland area, Cowardin classification, and HGM.

Water/Wetland ID	Latitude	Longitude	Feature Size (acre)	Cowardin Classification	HGM Class
Wetland 1	36.800096°	-108.080704°	0.003	PEM	Riverine
Wetland 2	36.800071°	-108.080726°	0.004	PEM	Riverine
Wetland 3	36.800308°	-108.081219°	0.007	PEM	Riverine
Wetland 4	36.800289°	-108.081278°	0.007	PEM	Riverine
Total			0.021		
OHWM 1	36.800175°	-108.081010°	0.057	R4SBJx	Riverine
Total			0.057		

PEM = palustrine emergent; R4SBJx = riverine, intermittent, streambed, intermittently flooded, excavated.

Vegetation

Data were collected from two locations in the project area (Figure 2)—one in wetlands (SP 2) and one in uplands (SP 1)—to document the characteristics of the vegetation. Vegetation in the wetlands was dominated by herbaceous species such as reed canarygrass (*Phalaris arundinacea*; facultative wetland), common beaked sedge (*Carex utriculata*; obligate), and broadleaf cattail (*Typha latifolia*; obligate). Vegetation at SP 2 met the dominance test for hydrophytic vegetation; upland points SP 1 did not meet any of the indicators for hydrophytic vegetation. Other prevalent vegetation included common horsetail (*Equisetum arvense*; facultative) and Siberian elm (*Ulmus pumila*; upland). Vegetation in the uplands was dominated by smooth brome (facultative upland) and Siberian elm.

Soils

Soil at SP 2 was taken near the channel of Flora Vista Arroyo and had a matrix color of 10YR 4/3 with a redox feature of 10YR 4/6. The hydric soil indicator at SP2 was depleted matrix (F3). Soils at SP 1 had a matrix color of 10YR 4/4 with no redox features and did not meet any of the indicators for hydric soils.

Hydrology

Hydrology indicators at SP 2 included surface water (A1), high water table (A2), and saturation (A3). No hydrology indicators were observed at SP 1.

Jurisdictional Assessment

To assist the Corps in making a preliminary jurisdictional determination, ERO reviewed the proximity and potential surface water connection of wetlands to known jurisdictional WOTUS using aerial photo interpretation and information from the wetland delineation. This information is accurate as of the date of this report and may change when further guidance documentation is issued.

ERO has made a preliminary determination that all wetlands and OHWMs in the project area are likely jurisdictional since they appear to have a direct downstream surface connection to the Animas River, a known WOTUS.

Endangered Species Act Compliance

During the 2023 survey, ERO assessed the project area for potential habitat for threatened, endangered, and candidate species listed under the Endangered Species Act (ESA) of 1973, as amended (16 United States Code 1531 et seq.). Adverse effects on a federally listed species or its habitat require consultation with the Service under Section 7 or Section 10 of the ESA. The Service lists several threatened and endangered species with potential habitat in the project area (Table 3).

Table 3. Federally threatened, endangered, and candidate species potentially found in the project area or potentially affected by projects in the project area.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to Be Affected by Project?
Mammals				
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	E	Shrub riparian/wet meadows.	No
Birds				
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	T	Dense woodlands with nearby water sources with thick shrubby vegetation.	No
Fish				
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	E	Warm rivers that have large snowmelt runoff and lower, relatively stable base flows.	No
Razorback sucker	<i>Xyrauchen teanus</i>	E	Large river species in areas with strong current and backwaters.	No
Insects				
Monarch butterfly	<i>Danaus plexippus</i>	C	Dependent on milkweeds (<i>Asclepiadoideae</i>) as host plants and forage on blooming flowers; a summer resident.	No
Plants				
Mesa Verde cactus	<i>Sclerocactus mesae-verdae</i>	T	Dry, low, exposed hills and mesas in full sun.	No

*T = Federally Threatened Species; E = Federally Endangered Species; C = Candidate Species.

Source: Service 2023.

There is no likelihood for the proposed project to affect the New Mexico meadow jumping mouse, yellow-billed cuckoo, Colorado pikeminnow, razorback sucker, monarch butterfly, or Mesa Verde cactus because of the lack of suitable habitat in the project area. Although the project area occurs in the historical range of the New Mexico meadow jumping mouse, the project area does not meet the preferred habitat conditions for this species (e.g., riparian habitat with dense, herbaceous wetlands that grow to at least 24 inches in height, contiguous suitable habitat greater than 15 acres, or within 330 feet of suitable habitat patches) (Colorado Parks and Wildlife 2019; Service 2020). The Flora Vista Arroyo does not contain dense woody shrubs and trees or consistent water at times when cuckoos would use the area and, therefore, no impacts on cuckoos would occur. The lack of consistent water flow precludes habitat suitability for Colorado pikeminnow and razorback sucker. Best management practices (BMPs) would be utilized to minimize surface run-off. Based on ERO’s current knowledge of the project, the project activities would not result in any changes to historic patterns of water regimes or land use. Because of the lack of habitat and no individuals recorded, the proposed project would not affect these species.

National Historic Preservation Act Compliance

To assist with the Corps’ consultation obligations under Section 106 of the National Historic Preservation Act (NHPA), a file search was conducted of the project area shown on Figure 1. The New Mexico

Cultural Resource Information System (NMCRIS) was consulted to determine past inventories and previously documented resources in the project area.

NMCRIS identified one previous inventory that overlaps the area of potential effects. NMCRIS No. 122071 is a linear survey conducted in 2011 ahead of the Proposed Flora Vista Sanitary Sewer Collection System. The survey area encompasses CR 3500 and Bridge 8111. No previously documented cultural resources were identified in the project area. One historical ditch is located south of the project area and would not be impacted by the current project. A 1963 Flora Vista, NM 7.5-minute quadrangle map shows CR 3500 and CR 3312, indicating that the roads both meet the 50-year age criterion. The project consists of replacing the bridge over Flora Vista Arroyo along CR 3500. The extant bridge is a steel girder bridge with wood wing walls. The wing walls on the north side of the bridge are collapsing and are currently held up with metal piping. The bridge was constructed in 1967 and also meets the 50-year age criterion; however, this bridge type is typically not considered a historically significant type of bridge. Additionally, upgrading the bridge is in keeping with the overall historic use of CR 3500. CR 3312 would not be impacted by the proposed project. No impacts on historic properties are expected from the proposed project.

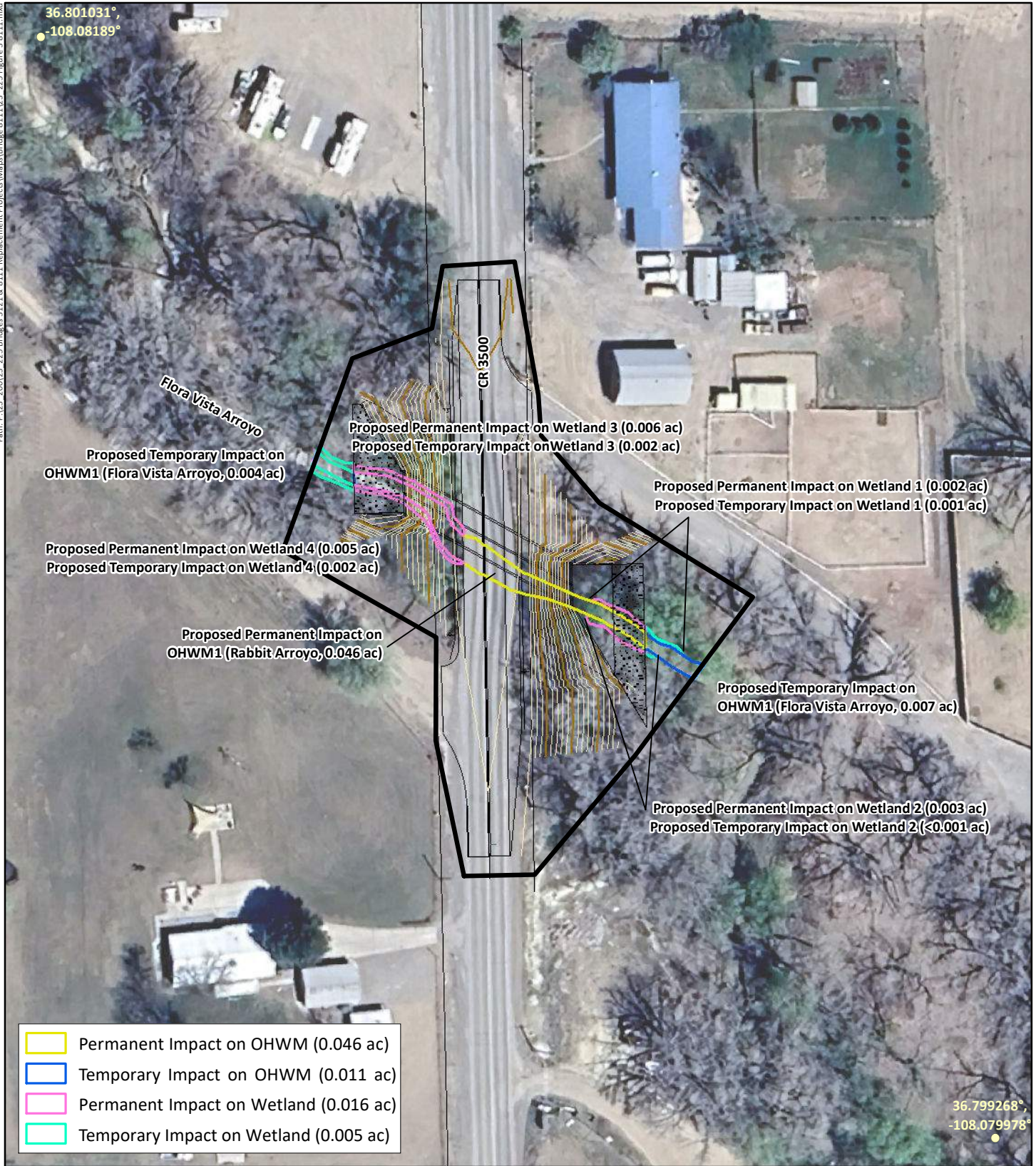
Activity to Be Authorized

The Client is proposing to construct a concrete box culvert under Bridge 8111 on CR 3500 to improve drainage along Flora Vista Arroyo (Figure 3). The construction plan set is included in Appendix C. The existing bridge is a steel girder type bridge with concrete and wood wing walls. The wing walls on the south side of the bridge are eroded and collapsing and are currently held up with metal piping. Proposed construction consists of adding a concrete box culvert in line with Flora Vista Arroyo to improve drainage (Figure 1), resurfacing approximately 250 feet of CR 3500, grading, replacing the failing retaining walls with flared concrete wing walls, and adding riprap aprons for erosion control along the inlet, outlet, and banks of the arroyo. New Mexico Department of Transportation Class B riprap with geosynthetic filter fabric would be placed approximately 30 feet upstream and 35 feet downstream of the installed structure in the bankfull bench for scour protection. The water's edge of the project area extent would be graded at a 3:1 slope and planted and seeded with native grass and riparian seed mixes (Appendix C). No standing live Rio Grande cottonwood trees would be removed for construction of the project.

The bridge support would require temporary impacts for construction of the bridge abutments. The bridge abutments would consist of micropiles, wing walls, riprap, and boulders. The proposed project would permanently impact 0.016 acres of wetlands and 0.046 acres of OHWM/open water (Table 4). The permanent impacts would mainly be a result of proposed riprap, viaduct piers, and bridge abutments.

Table 4. Summary of proposed impacts.

Resource	Permanent Impacts (acres)
Wetlands	0.016
OHWM	0.046
Total	0.062



Bridge 8111 Replacement Project

- Ordinary High Water Mark (OHWM; 0.057 ac)
- Wetland (0.021 ac)
- Project Area/Delineation Limits (1.06 ac)

Image Source: Airbus© April 27, 2023

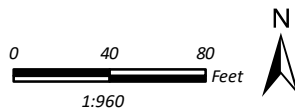


Figure 3
Proposed Impacts

Prepared for: TYLin
File: 23_225 Figure 3 8111.mxd (WH)
February 28, 2024



Avoidance and Minimization

Efforts were made to minimize impacts on WOTUS and wetlands in the project area to the maximum extent possible. This includes limiting impacts along the wetlands to the minimum amount necessary and limiting impacts on the Flora Vista Arroyo riparian corridor. No areas outside of the project area limits would be disturbed. All temporary impacts associated with the project would be returned to pre-project conditions following completion of the proposed activities. Temporarily disturbed areas would be seeded with a native seed mix following construction.

Best Management Practices

BMPs would be implemented during construction, which would help minimize impacts on the stream channel and wetland and riparian areas. These BMPs include installing temporary fencing to deter access to areas outside the project area limits, placing staging areas in upland areas, installing temporary wetland mats, and installing sediment- and erosion-control devices to minimize surface runoff in disturbed areas. The proposed activities would occur during 2024.

Mitigation

The County is not proposing specific compensatory mitigation because less than 0.10 acre of wetlands would be permanently impacted by the proposed project. Although the project would impact more than 0.03 acre of stream channel, the County is not proposing any specific compensatory mitigation. The majority of the stream impacts are related to replacing an existing structure, and areas outside of the culvert would be stabilized and seeded with a native seed mix. All temporarily disturbed riparian and upland areas would be planted with native seed mixes appropriate for the elevation and mulched.

Compliance with Nationwide and Regional Permit Conditions

ERO believes this work is authorized under one or more NWP, particularly NWP 14 for Linear Transportation Projects. As currently designed, the proposed project complies with all applicable NWP general, and New Mexico regional conditions associated with current NWP. All temporary and permanent impacts have been limited to the minimum amount necessary to construct the project. Of particular relevance, the project would reduce flood hazards and comply with Federal Emergency Management Agency (FEMA)-approved floodplain management requirements, in compliance with general condition 9 and general condition 10, by maintaining the preconstruction course, condition, capacity, and location of open waters to the maximum extent practicable. No habitat for threatened or endangered species occurs in the project area, in compliance with general condition 18 and the ESA. The project area was evaluated for historic resources in compliance with general condition 20 and the NHPA.

Project Contacts

Permitting Consultant

Heidi McGrath
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835 East Second Avenue, Suite 400
Durango, Colorado 81301
(970) 946-1859
hmcgrath@eroresources.com

Entity Requesting Authorization

Scot Grossman
TYLin
500 4th Street Northwest #403
Albuquerque, New Mexico 87102

References

- Allred, K. 2005. *A Field Guide to the Grasses of New Mexico*. New Mexico State University.
http://aces.nmsu.edu/pubs/sale/documents/_GrassesNewMexico_2016.
- Allred, K. and R.D. Ivey. 2020. *Flora Neomexicana III*. www.lulu.com.
- Brinson, M.M. 1993. A hydrogeomorphic classification of wetlands. U.S. Army Corps of Engineers, Waterways Experiment Station. Wetlands Research Program, Technical Report WRP-DE-4.
- Colorado Parks and Wildlife. 2019. New Mexico Meadow Jumping Mouse Factsheet and Habitat Scorecard.
https://cpw.state.co.us/Documents/LandWater/WetlandsProgram/PrioritySpecies/Factsheet-and-Habitat-Scorecard_NMMeadowJumpingMouse.pdf. Last accessed October 2023.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and Deepwater habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services Program. FWS/OBS-79/31.
- Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual, Technical Report 7-87-1, U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS.
- U.S. Army Corps of Engineers (Corps). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. U.S. Army Research and Development Center. Vicksburg, MS.
- U.S. Army Corps of Engineers (Corps). 2020. *National Wetland Plant List, Version 3.5*. <http://wetland-plants.usace.army.mil/>. Corps of Engineers Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH. Last accessed October 2023.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2023a. Web soil survey for parts of San Juan County, New Mexico.
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2023b. *The PLANTS Database*. <http://plants.usda.gov>. National Plant Data Team, Greensboro, NC 27401-4901 USA. Last accessed October 11, 2023.

U.S. Fish and Wildlife Service (Service). 2020. Species Status Assessment Report for the New Mexico meadow jumping mouse (*Zapus hudsonius luteus*). Albuquerque, NM.

U.S. Fish and Wildlife Service (Service). 2023. Endangered, Threatened, Proposed and Candidate Species. <http://ecos.fws.gov/ipac/>. Last accessed October 2023.

U.S. Fish and Wildlife Service (Service). 2024. National Wetland Inventory Mapper. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>. Last accessed February 2024.



Photo 1 - Flora Vista Arroyo with wetland vegetation on either side, flowing under CR 3500. View is south.



Photo 2 - Concrete pylons under CR 3500 with heavy erosion and channel alteration. View is north.



Photo 3 - Undercut banks with wetland fringe in Flora Vista Arroyo. View is north.



Photo 4 - Eroded banks and grading under CR 3500. View is north.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 23-255 Bridge 8111 City/County: Flora Vista/San Juan Sampling Date: 9/13/23
 Applicant/Owner: San Juan County Public Works Department State: NM Sampling Point: SP1
 Investigator(s): ERO Resources Section, Township, Range: S22 T30N R12W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): _____ Lat: 36.800081 Long: -108.080617 Datum: _____
 Soil Map Unit Name: Riverwash; Stumble sandy clay loam, gently sloping NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus pumila</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>50</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <u>Tamarix sp.</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Bromus inermis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Elymus elymoides</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust _____				
Remarks: _____ _____ _____				

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 4/4	100					SaLo	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil damp from recent rain

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Upland site

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 23-255 Bridge 8111 City/County: Flora Vista/San Juan Sampling Date: 9/13/23
 Applicant/Owner: San Juan County Public Works Department State: NM Sampling Point: SP2
 Investigator(s): ERO Resources Section, Township, Range: S22 T30N R12W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): _____ Lat: 36.800088 Long: -108.080712 Datum: _____
 Soil Map Unit Name: Riverwash; Stumble sandy clay loam, gently sloping NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Ulmus Pumila</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>15</u>)					
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
Herb Stratum (Plot size: <u>5</u>)					
1. <u>Equisetum arvense</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Carex utriculata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>80</u> % Cover of Biotic Crust _____					

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

 Most wetland vegetation is about 4 ft above OHWM; smooth brome is encroaching to water's edge

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/3	100					sandy loam	
10-20	10YR 4/3	90	10YR 4/6	10	C	PL	sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes X No 16 Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

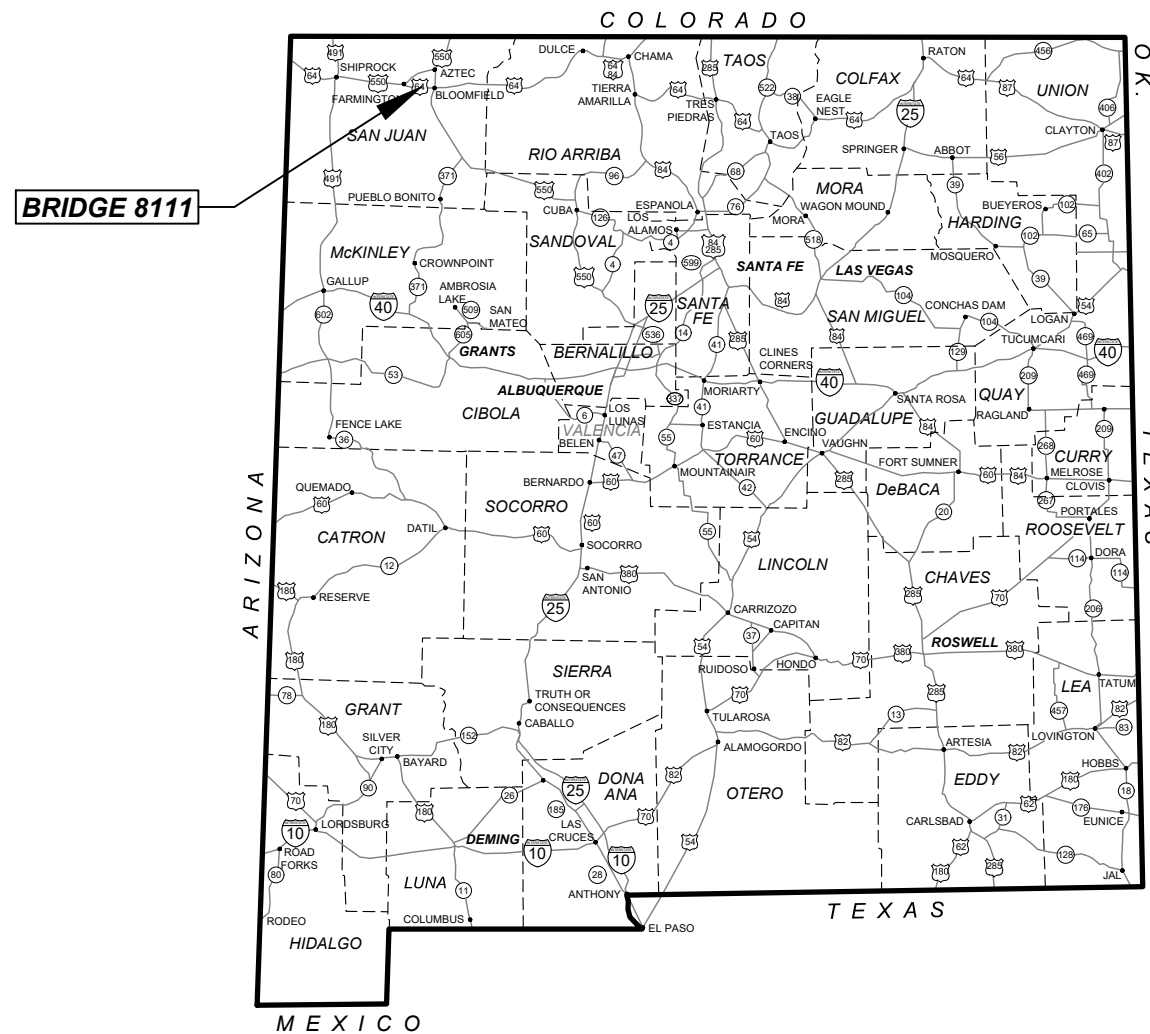
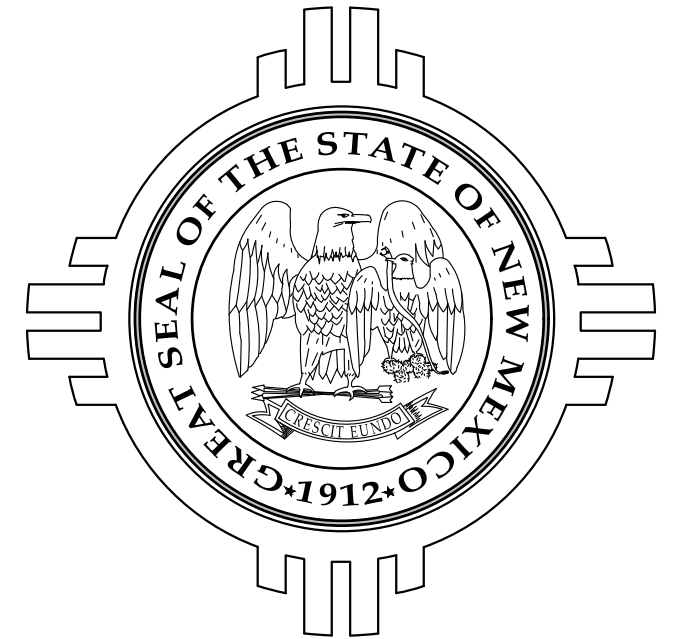
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in arroyo is between 2-4 ft wide, and is 3-5 ft below the wetland and vegetation at most locations along arroyo.

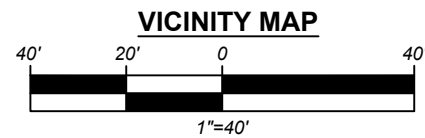
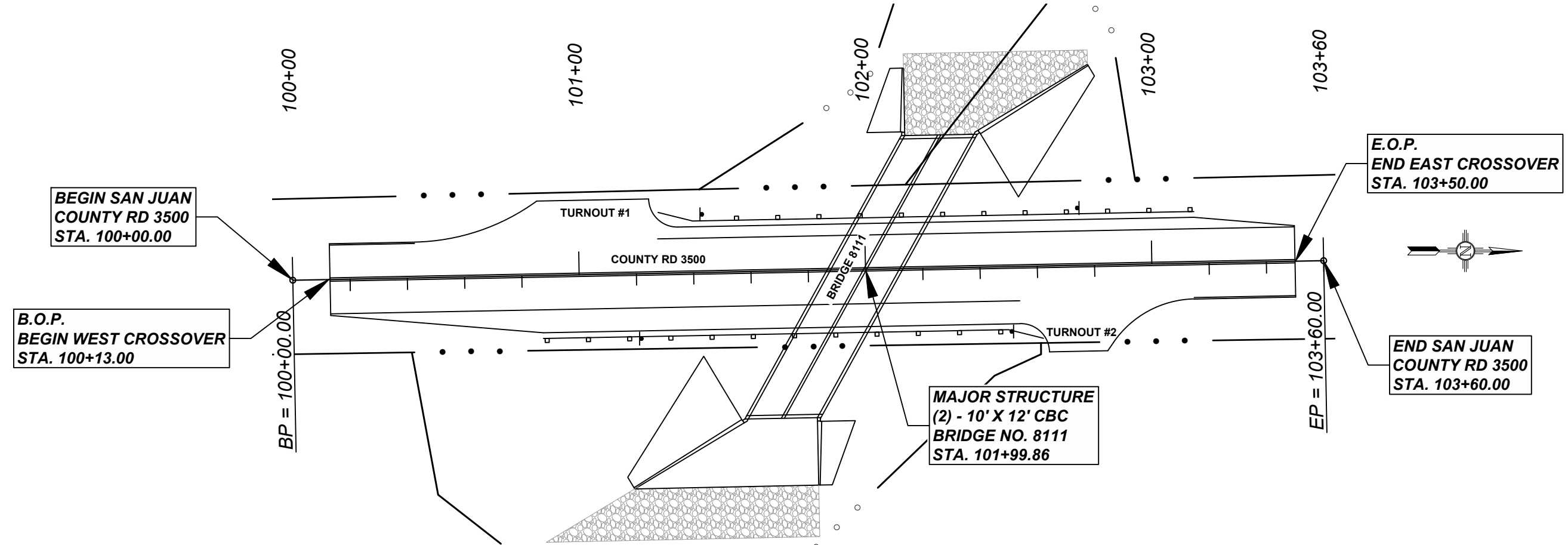
New Mexico SAN JUAN COUNTY CONSTRUCTION PLANS

BRIDGE 8111 REPLACEMENT SAN JUAN COUNTY



PRELIMINARY
60% PLANS

LENGTH OF PROJECT 0.068 miles
 THIS PROJECT BEGINS IN SECTION 22, T.30N, R.12W, N.M.P.M.
 THIS PROJECT ENDS IN SECTION 22, T.30N, R.12W, N.M.P.M.



INTENT OF PROJECT
 REPLACEMENT OF BRIDGE 8111 ON COUNTY ROAD 3500 ACROSS FLORA VISTA ARROYO IN SAN JUAN COUNTY.
 ADD CULVERT TO IMPROVE DRAINAGE FOR THE ARROYO.

THE 2019 EDITION OF NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD DRAWINGS FOR HIGHWAY AND BRIDGE CONSTRUCTION SHALL GOVERN CONSTRUCTION OF THIS PROJECT.

PROJECT CONTACT INFORMATION

SAN JUAN COUNTY
NICK PORELL
 PUBLIC WORKS DIRECTOR
 (505) 334-4530

T.Y. LIN
TATE TOLEDO
 ROADWAY ENGINEER
 (505) 842-5822



SAN JUAN COUNTY
 BRIDGE 8111

NO.	DESCRIPTION	DATE	BY
4			
3			
2			
1			

CR 3500 OVER FLORA VISTA ARROYO
 BRIDGE 8111
 VICINITY MAP

60% NOT FOR CONSTRUCTION



SAN JUAN COUNTY
BRIDGE 8111

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
SERIES 1	
1-1	COVER SHEET
1-2	VICINITY MAP
1-3	INDEX OF SHEETS
1-4	SUMMARY OF QUANTITIES
1-5	GENERAL NOTES
	SUB-TOTAL - 5
SERIES 2	
2-1	TYPICAL SECTIONS
	SUB-TOTAL - 1
SERIES 3	
3-1	ROADWAY PLAN & PROFILE
3-2	CULVERT PLAN & PROFILE
	SUB-TOTAL - 2
SERIES 4	
4-1	TURNOUT PLAN & PROFILE
	SUB-TOTAL - 1
SERIES 7	
7-1	SIGNING AND STRIPING GENERAL NOTES
7-2	PERMANENT SIGNING AND STRIPING QUANITITES
7-3	PERMANENT SIGNING AND STRIPING
	SUB-TOTAL - 3

GRAND TOTAL - 12

NO.	DESCRIPTION	DATE	BY
4			
3			
2			
1			

CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
INDEX OF SHEETS

60% NOT FOR
CONSTRUCTION



SAN JUAN COUNTY
BRIDGE 8111

SUMMARY OF QUANTITIES			ROADWAY		MAJOR STRUCTURES		PROJECT TOTAL	
ITEM NO.	DESCRIPTION	BID UNIT	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL
201000	CLEARING AND GRUBBING	LS					LS	
203100	BORROW	C.Y.	6,200					
203200	UNSUITABLE MATERIAL EXCAVATION	C.Y.	100					
206000	UNSUITABLE MATERIAL EXCAVATION	C.Y.			350			
206100	SELECT BACKFILL MATERIAL	C.Y.	600					
207000	SUBGRADE PREPARATION	S.Y.	1,400					
303160	BASE COURSE 6"	S.Y.	1,400					
407000	ASPHALT MATERIAL FOR TACK COAT	TON	1					
408100	PRIME COAT MATERIAL	TON	3					
416107	MINOR PAVING TYPE I, HMA SP-IV	S.Y.	1,400					
502600	OBSTRUCTION REMOVAL	L.F.	365					
511030	STRUCTURAL CONCRETE, CLASS AA	C.Y.			365			
540060	REINFORCING BARS GRADE 60	LB			51,300			
547000	SAFETY AND ENVIRONMENTAL REQUIREMENTS	LS					LS	
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS					LS	
602000	RIPRAP CLASS A	C.Y.			200			
602005	RIPRAP CLASS A (NON-ENCLOSED)	C.Y.	250					
603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS					LS	
606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	365					
606052	END TREATMENT TL-2 END TERMINAL	EACH	2					
606055	END TREATMENT DRIVEWAY END ANCHOR	EACH	2					
617000	VIBRATION MONITORING	LS					LS	
617003	VIDEO RECORDING	LS					LS	
618000	TRAFFIC CONTROL MANAGEMENT	LS					LS	
621000	MOBILIZATION	LS					LS	
632000	CLASS A SEEDING	ACRE	1					
701000	PANEL SIGNS	S.F.	12					
701030	REMOVE AND RESET PANEL SIGN	EACH	1					
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	L.F.	28					
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LS					LS	
704700	HOT THERMOPLASTIC PAVEMENT MARKINGS 4"	L.F.	1,210					

NO.	DESCRIPTION	DATE	BY
4			
3			
2			
1			

CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
SUMMARY OF QUANTITIES

60% NOT FOR
CONSTRUCTION

GENERAL NOTES

1. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH NMDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, 2019 EDITION.
3. THE CONTRACTOR SHALL ASSUME THE SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE OWNER AND ENGINEER FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
5. ALL STREET STRIPING, ALTERED OR DESTROYED, SHALL BE THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS TO SAME LOCATION AS EXISTING, OR AS INDICATED BY THIS PLAN SET.
6. NO PAVING ACTIVITIES SHALL BE STARTED UNTIL THE LOCATION AND SERVICEABILITY OF ALL UNDERGROUND UTILITIES WITHIN THE ROADWAY ARE APPROVED BY THE COUNTY.
7. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY, AND PRESERVE ANY AND ALL EXISTING UTILITIES. ANY PREVIOUSLY UNKNOWN UTILITY RELOCATIONS IDENTIFIED BY THE CONTRACTOR AND APPROVED BY THE COUNTY PROJECT MANAGER SHALL BE COVERED THROUGH THE UTILITY RELOCATION ALLOWANCE ESTABLISHED FOR THIS PROJECT.
8. THE CONTRACTOR IS TO SUPPORT AND MAINTAIN THE INTEGRITY OF ALL UNDERGROUND WATER, WASTEWATER, REUSE WATER, TELEPHONE, ELECTRIC CABLES AND CABLE TELEVISION UTILITIES AT NO ADDITIONAL COST TO THE OWNER. CABLE IS TO BE SUPPORTED AT A MAXIMUM OF EVERY FIFTEEN (15) FEET. THE CONTRACTOR SHALL COORDINATE WITH AND MAKE NECESSARY PAYMENT (IF ANY) TO UTILITY OWNER FOR DE-ENERGIZATION OF CABLES OR SUPPORT OF CABLES BY THE UTILITY OWNER.
9. CONTRACTOR, AT HIS EXPENSE, IS RESPONSIBLE FOR DRAINAGE MANAGEMENT AND EROSION CONTROL AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
10. THE CONTRACTOR, AT HIS EXPENSE, SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR PRIVATE ROADWAY EASEMENTS SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET, PRIVATE PROPERTY, OR INTO ANY PUBLIC DRAINAGE FACILITY.
11. CONTRACTOR, THROUGH BID ITEM #702810, SHALL BE RESPONSIBLE TO PROVIDE AND MAINTAIN ALL CONSTRUCTION SIGNING UNTIL THE PROJECT HAS BEEN ACCEPTED BY SAN JUAN COUNTY.
12. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
13. IF A PAVEMENT DROP-OFF IS CREATED DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL INITIATE PROTECTIVE ACTION TO MAINTAIN A SMOOTH TRANSITION. THIS WORK SHALL AT THE CONTRACTOR'S EXPENSE. NO ADDITIONAL PAYMENT SHALL BE MADE.
14. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE COUNTY PROJECT MANAGER OR CONSTRUCTION OBSERVER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
15. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
16. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.
17. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO RIGHT-OF-WAY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY COSTS INCURRED FOR REPAIRS SHALL BE THE COST OF THE CONTRACTOR.
18. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
19. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE M.U.T.C.D., U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
20. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
21. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, SIGNAGE, CURB & GUTTER, DRIVEPADS, ADA CURB RAMPS, AND SIDEWALK DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER NMDOT STANDARDS, AT HIS OWN EXPENSE.
22. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
23. GUARDS/POSITIVE PROTECTION SHALL BE LOCATED ALONG OPEN-SIDED WALKING SURFACES THAT ARE LOCATED MORE THAN 30 INCHES MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. GUARDS SHALL BE IN ACCORDANCE WITH SECTION 1016 OF THE 2018 IBC. IF THIS SITUATION OCCURS THE CONTRACTOR SHALL NOTIFY THE COUNTY PROJECT MANAGER PRIOR TO PROCEEDING.
24. WARPING OF SLOPES: THE CONTRACTOR SHALL WARP SLOPES WHERE NECESSARY TO STAY WITHIN THE RIGHT OF WAY OR TEMPORARY CONSTRUCTION EASEMENT LIMITS, SUBJECT TO THE APPROVAL OF THE COUNTY PROJECT MANAGER.
25. CONTRACTOR TO TEST SUBGRADE R-VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R-VALUE IS LESS THAN 40, REMOVE 2 FEET OF SUBGRADE MATERIAL AND IMPORT MATERIAL WITH R-VALUE GREATER THAN 40 OR CONTACT THE ENGINEER IMMEDIATELY SO THE PAVEMENT SECTION CAN BE MODIFIED.
26. AS-BUILTS: THE CONTRACTOR SHALL MAINTAIN AN UP TO DATE SET OF AS-BUILT PLANS FOR THE PROJECT. THESE PLANS SHALL BE KEPT CURRENT, WITHIN TWO WEEKS, AT ALL TIMES AND SHALL BE SUBJECT TO REVIEW BY THE PROJECT ENGINEER THROUGHOUT THE PROJECT AND WILL BE REVIEWED BY THE PROJECT ENGINEER FOR ACCURACY AND COMPLETENESS AT LEAST ONCE EVERY 30 DAYS. THE FINAL AS-BUILT PLANS SHALL BE SUBMITTED AND ACCEPTED BY THE COUNTY PROJECT MANAGER PRIOR TO FINAL PAYMENT. PREPARATION OF AS-BUILTS SHALL BE INCIDENTAL TO BID ITEM #621000.
27. VIBRATION MONITORING AND VIDEO TAPING DOCUMENTATION SHALL BE PERFORMED IN AND AROUND ALL STRUCTURES. "STRUCTURE" IS DEFINED AS BUILDINGS, RETAINING AND PRIVACY WALLS, END WALLS, DROP INLETS, CATCH BASINS, SEWER AND SERVICE PIPES, DRAINS AND OTHER FEATURES THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE CONSTRUCTION AREA AND AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION SHALL ALSO BE VIDEO TAPED. VIBRATION MONITORING AND VIDEO TAPING DOCUMENTATION SHALL BE PAID BY BID ITEM #617003.



SAN JUAN COUNTY
BRIDGE 8111

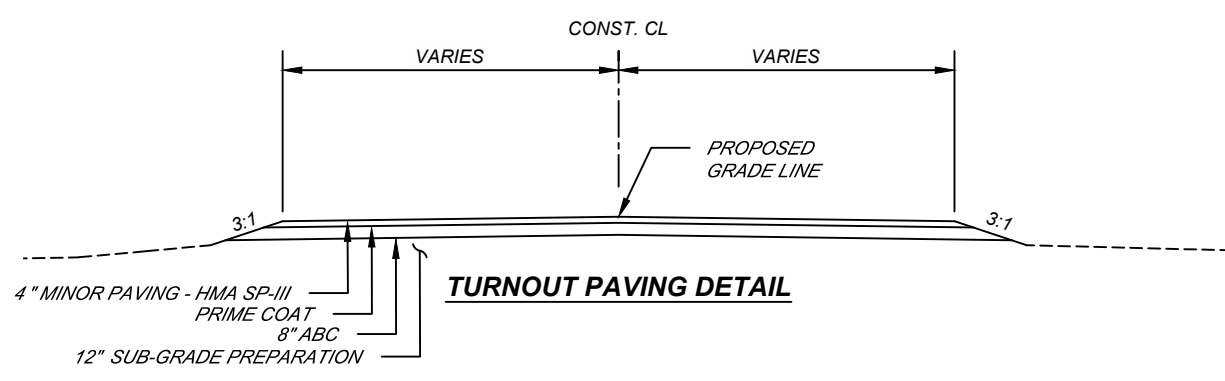
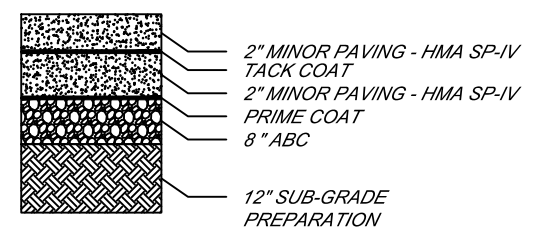
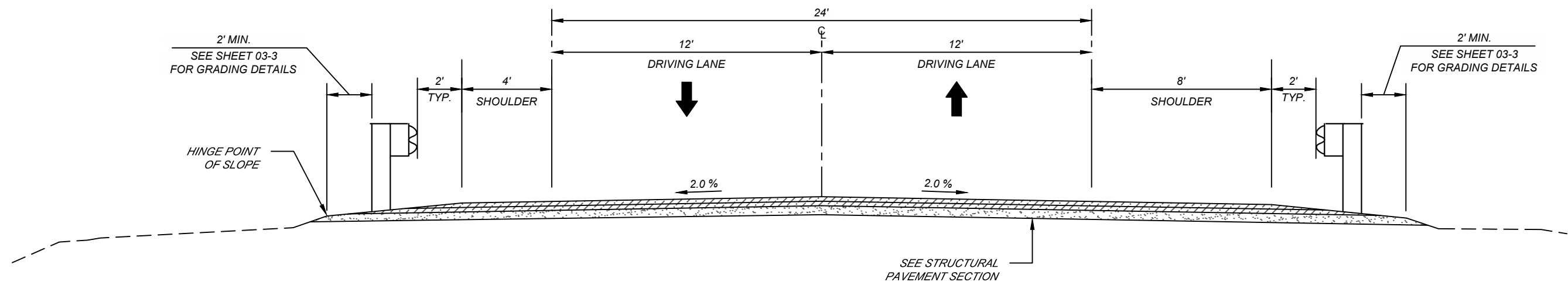
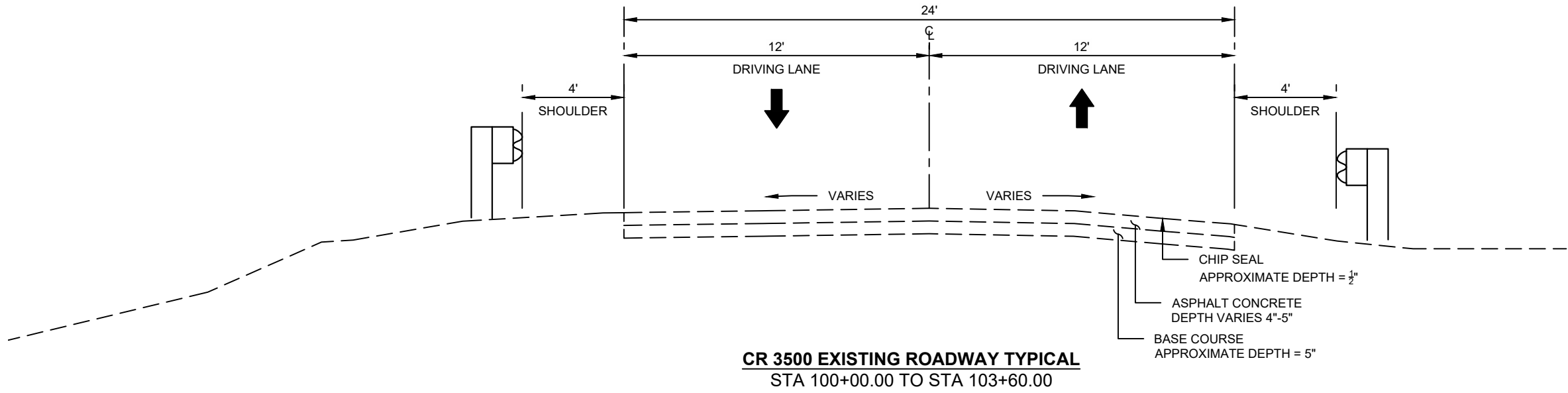
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CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
GENERAL NOTES

60% NOT FOR
CONSTRUCTION



SAN JUAN COUNTY
BRIDGE 8111



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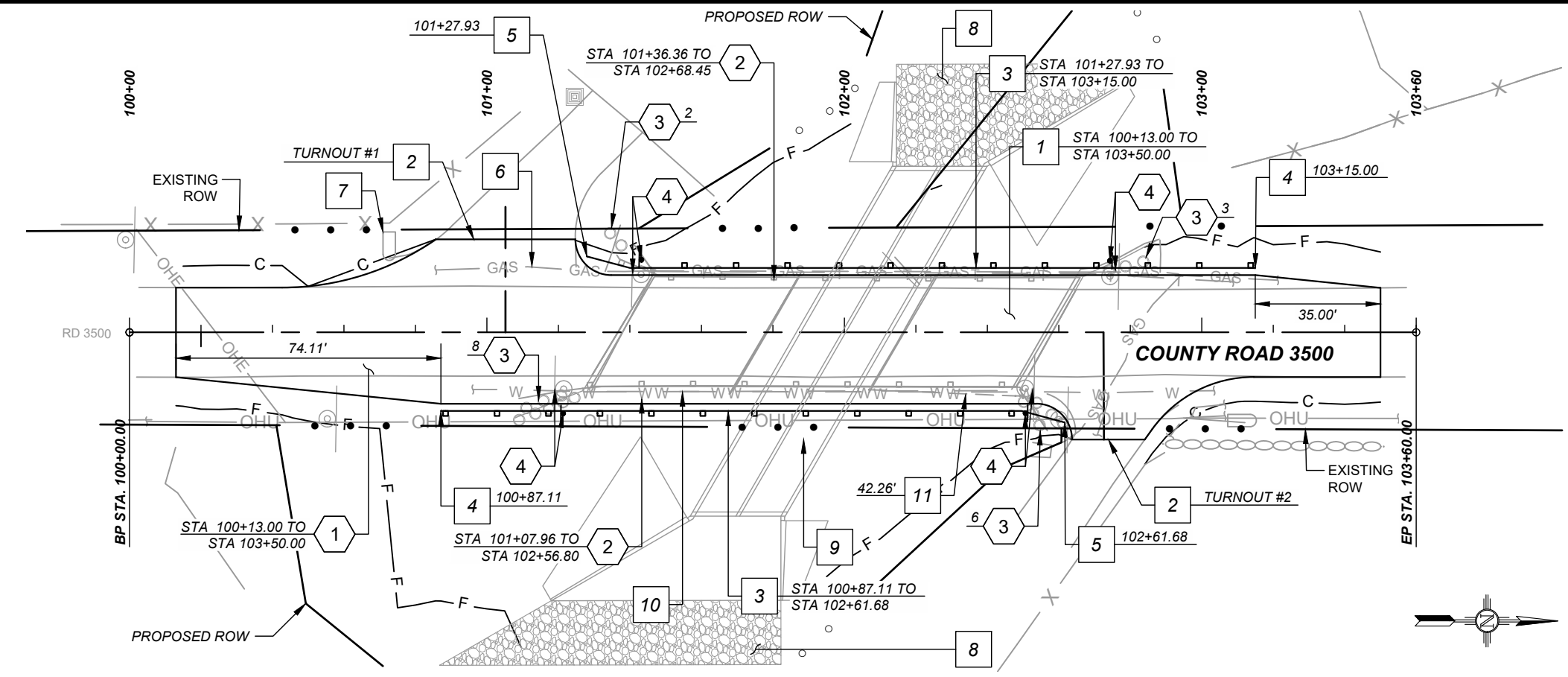
CR 3500 OVER FLORA VISTA ARROYO
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TYPICAL SECTIONS



SAN JUAN COUNTY
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CONSTRUCTION NOTES

- 1 BUILD NEW ROADWAY PAVEMENT WITH SUBGRADE PREPARATION. SEE STRUCTURAL PAVEMENT SECTION ON SHEET 02-1.
- 2 CONSTRUCT PAVED TURNOUT PER DETAILS ON SHEET 04-1.
- 3 INSTALL NEW GUARDRAIL PER NMDOT STD. DWG. 606-GR31.
- 4 INSTALL TL-2 END TERMINAL PER NMDOT STD. DWG. 606-GR31-8/20
- 5 INSTALL GUARDRAIL DRIVEWAY END ANCHOR PER NMDOT STD. DWG. 606-GR31-10/20
- 6 COORDINATE RELOCATION OF THE EXISTING GAS LINE, LOCATION TO BE DETERMINED BY COUNTY PROJECT MANAGER AND UTILITY COMPANY. INCIDENTAL TO UTILIZATION.
- 7 REMOVE AND RELOCATE EXISTING MAILBOX. LOCATION TO BE DETERMINED BY COUNTY PROJECT MANAGER.
- 8 INSTALL RIP RAP EROSION CONTROL WITH GEOSYNTHETIC FILTER FABRIC PER NMDOT STD. DWG. 602-02.
- 9 INSTALL 10"x12" CONCRETE BOX CULVERT DOUBLE OPENING, PER NMDOT STD. DWG. 511-63.
- 10 COORDINATE RELOCATION OF EXISTING WATERLINE, LOCATION TO BE DETERMINED BY COUNTY PROJECT MANAGER AND UTILITY COMPANY. INCIDENTAL TO UTILIZATION.
- 11 RELOCATE EXISTING CULVERT. LOCATION TO BE DETERMINED AND COORDINATED BY COUNTY PROJECT MANAGER AND UTILITY COMPANY.

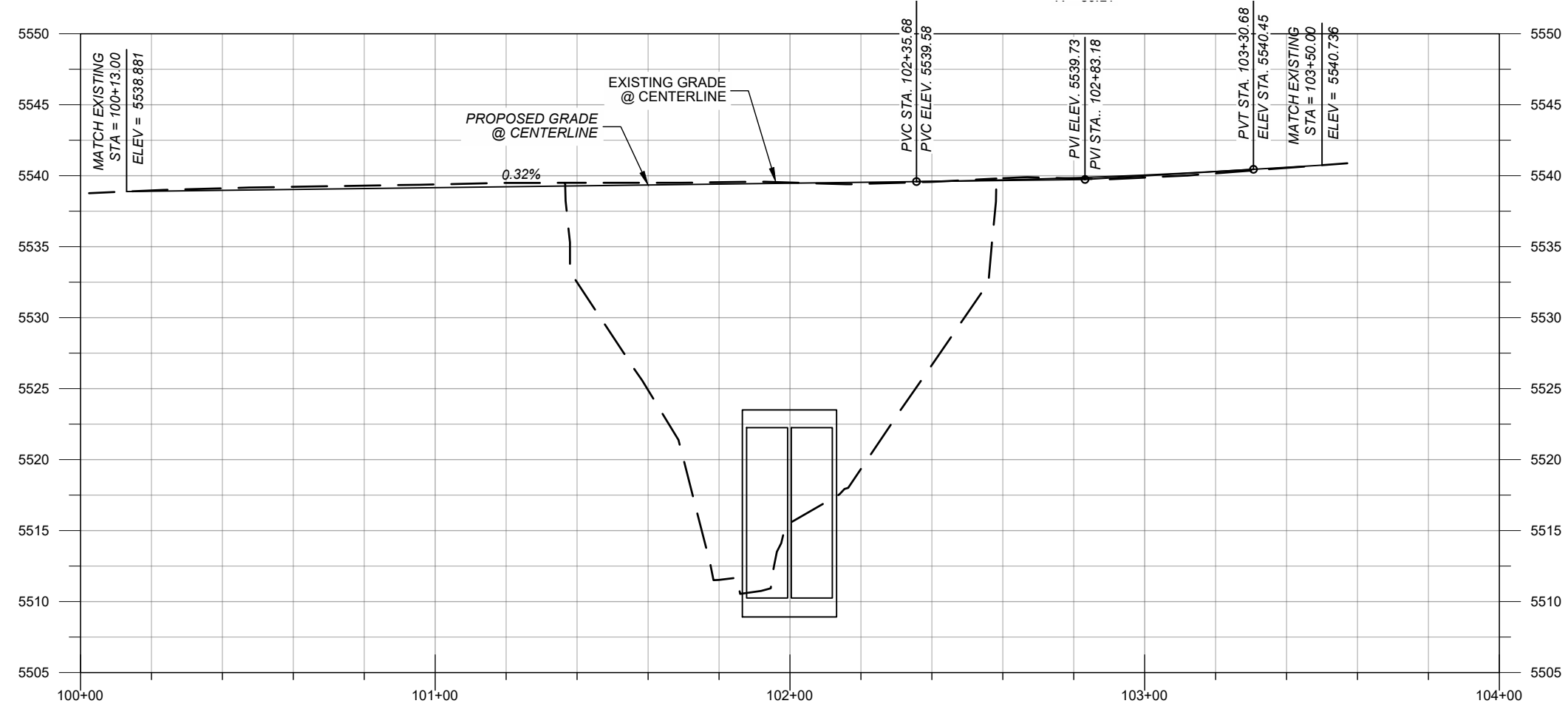


PLAN DRAWING SCALE: 1" = 40'

HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: 1" = 10'

REMOVAL NOTES

- 1 REMOVE EXISTING ASPHALT PAVEMENT.
- 2 REMOVE EXISTING GUARDRAIL.
- 3 REMOVE EXISTING BOLLARD/POLE.
- 4 REMOVE AND DISPOSE EXISTING SIGN. SEE SHEET 07-3 FOR NEW SIGN DETAILS.

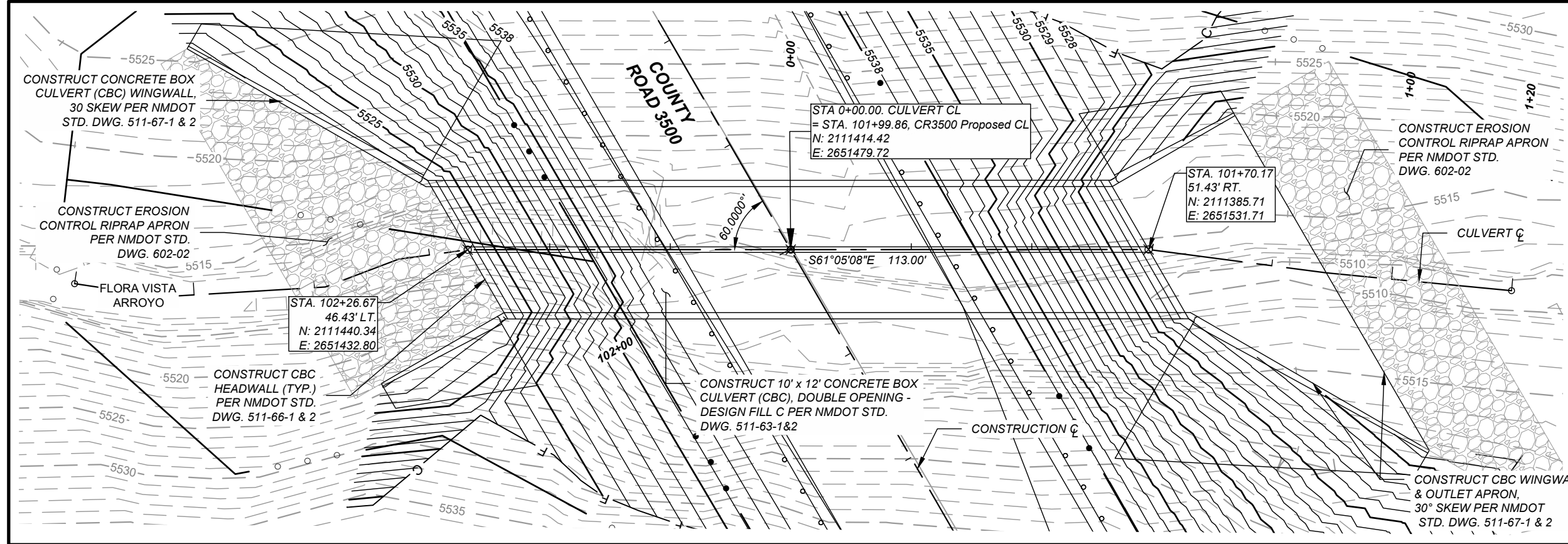


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CR 3500 OVER FLORA VISTA ARROYO
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ROADWAY PLAN AND PROFILE



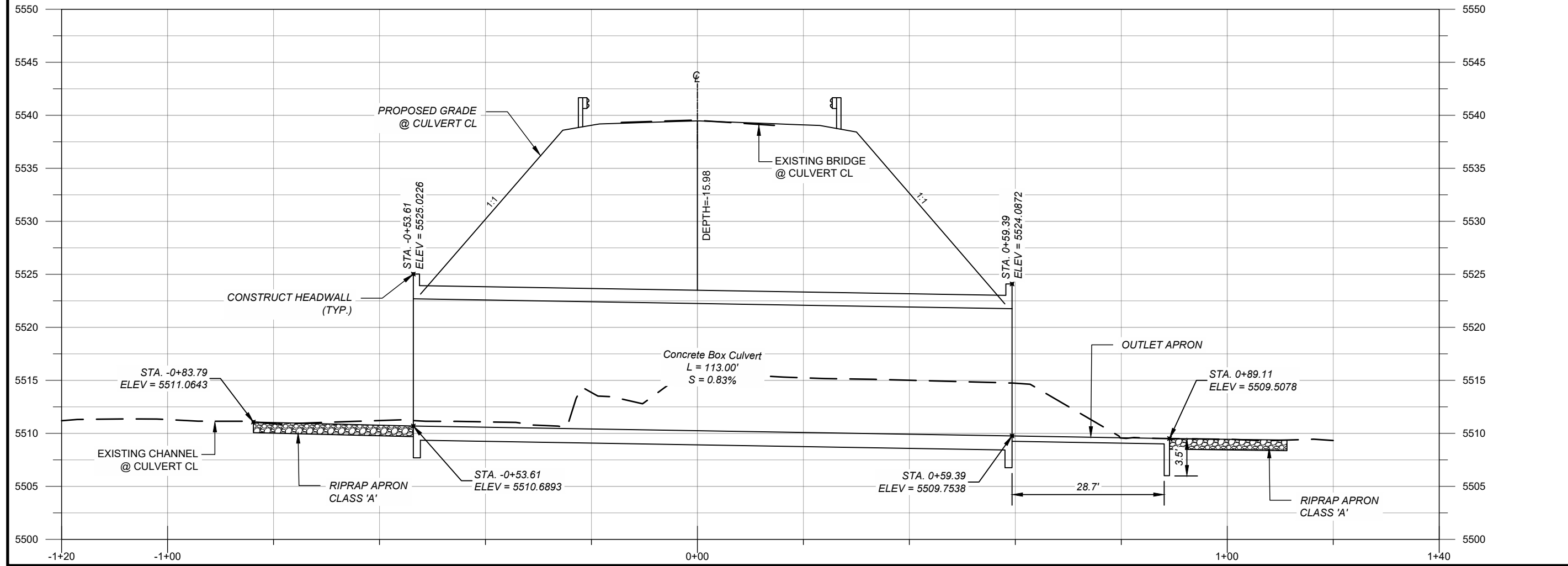
SAN JUAN COUNTY
BRIDGE 8111



- NOTES:
1. APPROXIMATE RIVER BOTTOM ELEV = 5510.22±
 2. PER HYDRAULIC ANALYSIS, 100-YR WSE = 5521.32
 3. SEE GEOTECH REPORT FOR BORING LOCATIONS AND DETAILS

PLAN DRAWING SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 10'

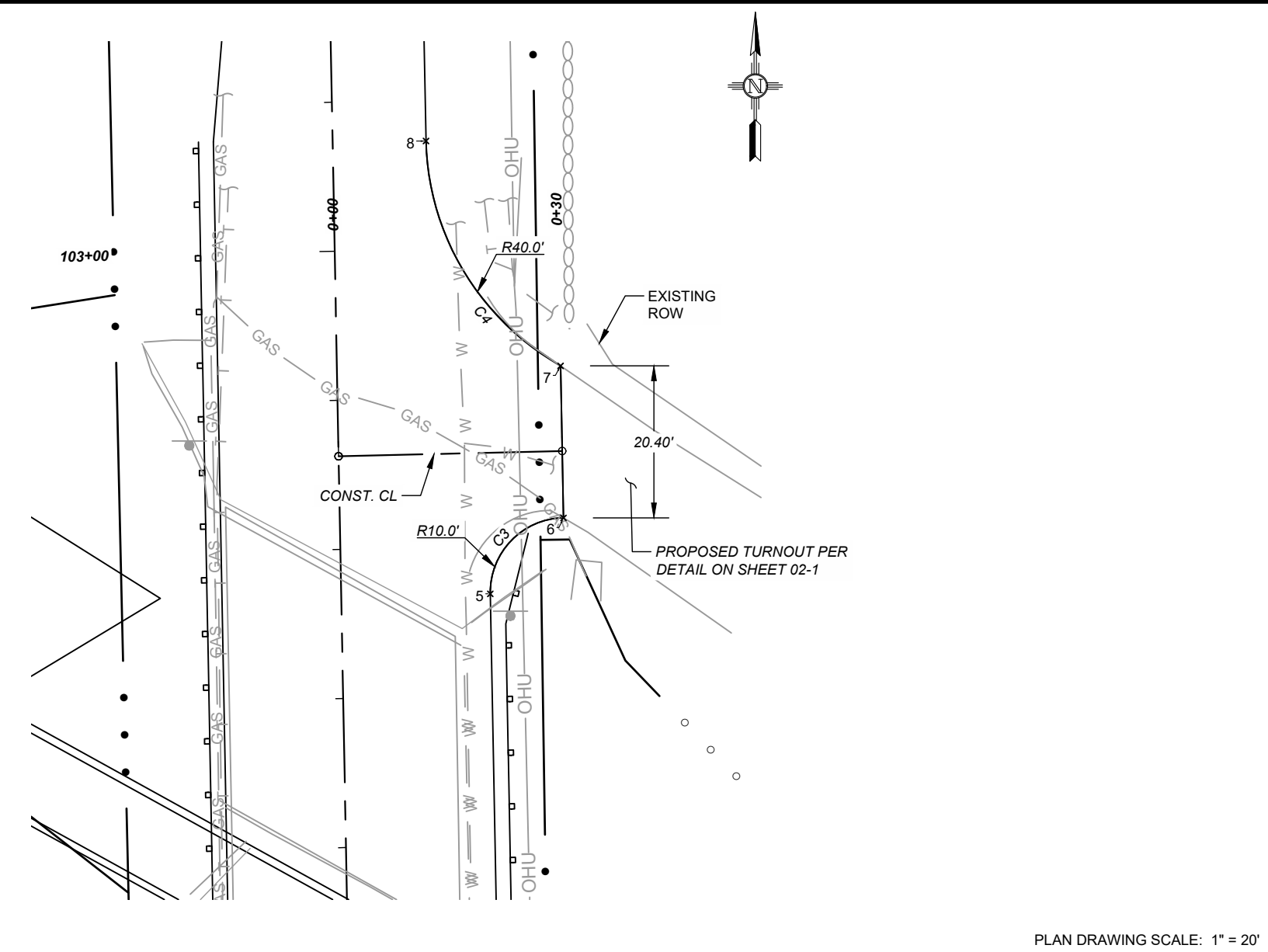
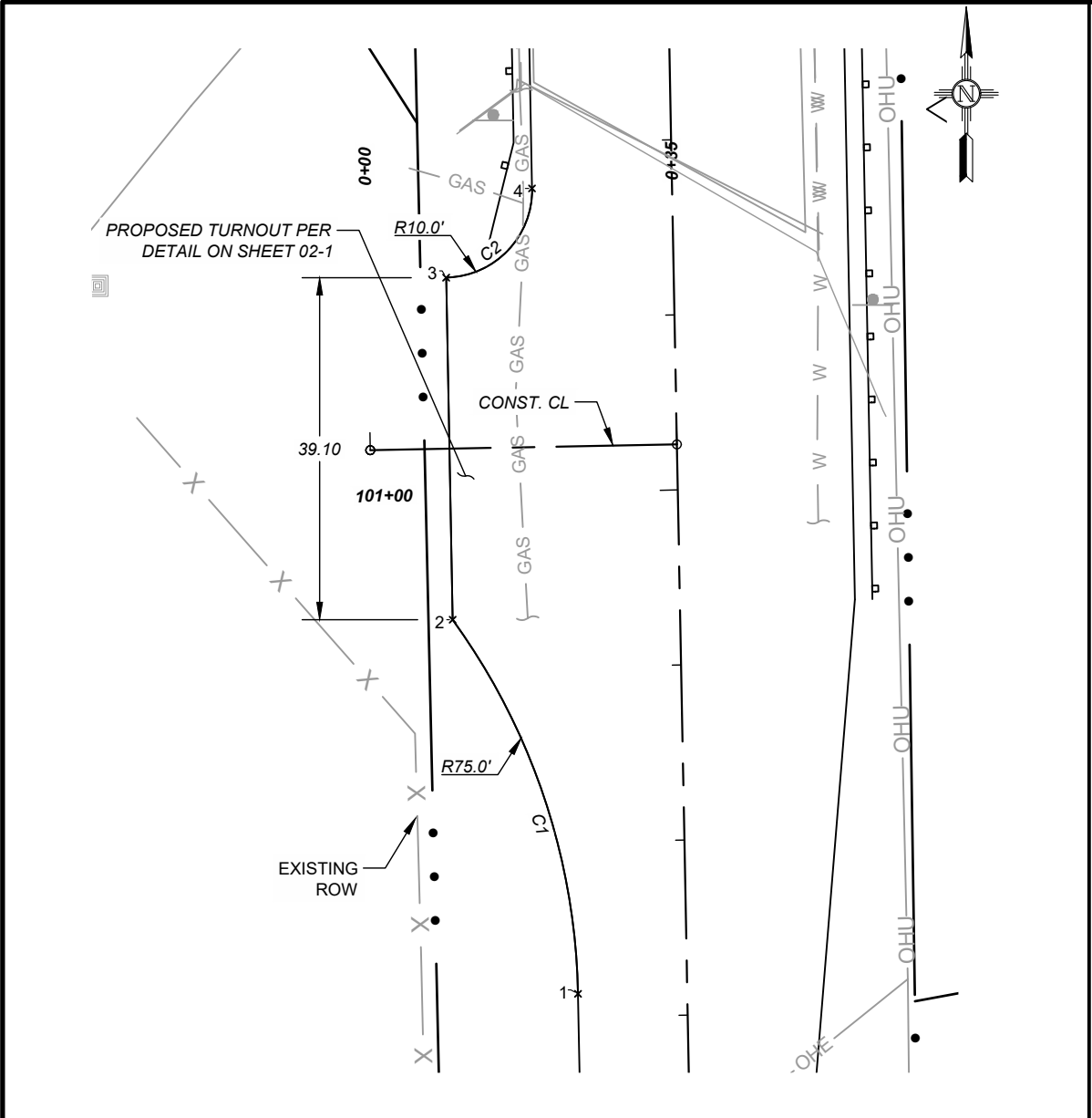


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CULVERT PLAN AND PROFILE



SAN JUAN COUNTY
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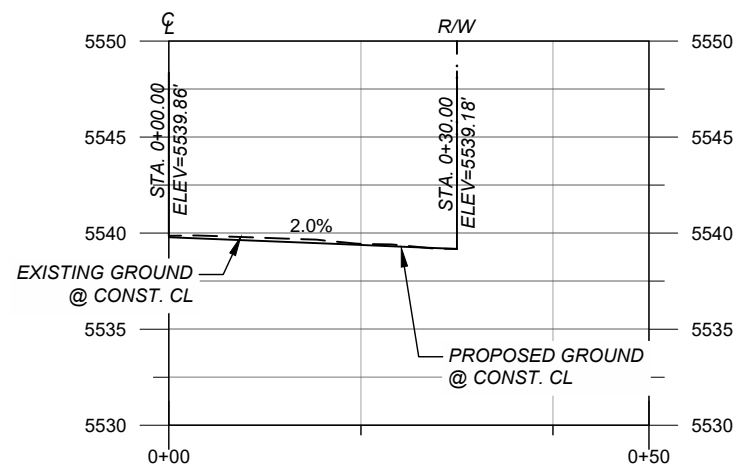
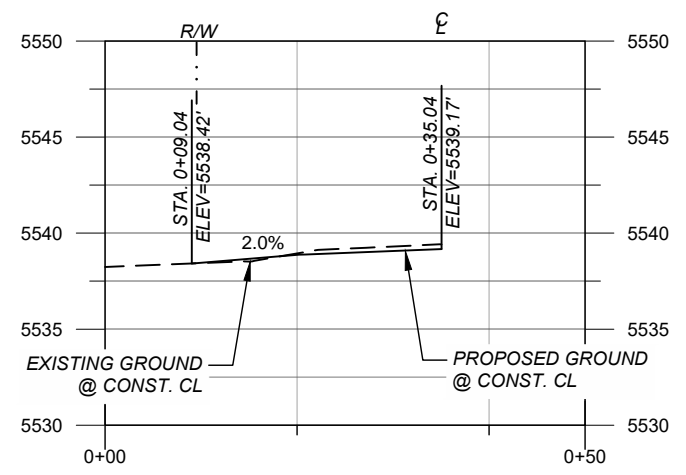


PLAN DRAWING SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 10'

TURNOUT #1

TURNOUT #2



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CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
TURNOUT PLAN & PROFILE

SIGNING AND STRIPING GENERAL NOTES

1. ALL REGULATORY, WARNING, SPECIAL, AND GUIDE SIGNS SHALL COMPLY WITH THE REQUIREMENTS DESIGNATED BY PROJECT ENGINEER AND MANAGER. LEGEND AND BACKGROUND TO BE SAME SHEETING TYPE.
2. ONLY 0.125 INCH THICK ALUMINUM PANEL SIGNS ARE PERMITTED FOR WARNING AND REGULATORY SIGNS.
3. ANTI-GRAFFITI COATING, WITH UV INHIBITOR, SHALL BE APPLIED ON ALL REGULATORY, WARNING, GUIDE, AND SPECIAL SIGNS.
4. QUANTITIES MAY VARY AS FIELD CONDITIONS DICTATE, THE CONTRACTOR WILL BE PAID FOR ACTUAL QUANTITIES USED.
5. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH N.M. STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION (LATEST EDITION) AND ANY APPLICABLE SPECIAL PROVISION AND/OR SUPPLEMENTAL SPECIFICATIONS. THE DEVICES SHALL COMPLY WITH THE CURRENT EDITION OF THE MUTCD WITH REVISIONS.
6. EACH SIGN FACE SHOWN ON PLANS SHALL MEET THE SPECIFICATIONS FOUND IN THE STANDARD HIGHWAY SIGNS MANUAL (CURRENT EDITION) FOR PROPER ARRANGEMENT, SPACING OF LETTERS, LETTER HEIGHT, SYMBOLS AND BORDERS FOR THE SPECIFIED SIZE AND MESSAGE AS SHOWN ON PLANS. ALL SPECIAL SIGN FACE DETAILS SHALL BE SUBMITTED TO THE COUNTY FOR REVIEW AND APPROVAL.
7. SIGN POST LENGTHS ARE MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE DRIVING LANE. POST LENGTHS SHALL BE A MINIMUM 5 FEET FOR RURAL ROADWAY SECTIONS TO A MINIMUM OF 7 FEET FOR URBAN AND INTERSTATE ROADWAY SECTIONS. SEE NMDOT STANDARD DRAWING 701-02-2/3.
8. ALL SIGNING HARDWARE, INCLUDING, BUT NOT LIMITED TO, BRACKETS BANDING, BUCKLES, FASTENERS, SCREWS, AND WASHERS, ETC. ARE CONSIDERED INCIDENTAL TO SIGN INSTALLATION. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
9. THREE (3) - 4 LBS./FT. SIGN POST INSTALLATION APPROVED ONLY IF THE SPAN BETWEEN THE OUTER POSTS EXCEEDS 84" (A SIGN WIDTH OF 96" OR GREATER).
10. 3'-6" BASE POSTS ARE REQUIRED FOR ALL SMALL SIGN POSTS AND BASE POSTS SHALL BE NEXT LARGER SIZE THAN MAIN SIGN POST. SEE NMDOT STANDARD DRAWING 701-02-1/3.
11. SIGN POSTS SHALL BE SQUARE TUBING AND SIZED PER NMDOT STANDARD DRAWING 701-02-1/3.
12. THE LATERAL CLEARANCE OF SIGNS SHALL BE NOT LESS THAN 6 FEET FROM THE EDGE OF SHOULDER OR 12 FEET FROM THE EDGE OF TRAVELED WAY FOR RURAL AREAS AND NO CLOSER THAN 2 FEET FROM FACE OF CURB FOR URBAN AREAS. SEE NMDOT STANDARD DRAWING 701-02-2/3.
13. CONTRACTOR SHALL FIELD VERIFY ALL SIGNING, TEXT, AND LOCATIONS PRIOR TO FABRICATION AND INSTALLATION. NEW SIGN LOCATIONS SHALL BE APPROVED BY THE COUNTY PROJECT MANAGER.
14. HOT THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON ALL STRIPING (LONG LINES, LEGENDS, SYMBOLS, ETC.). THE THERMOPLASTIC PAVEMENT MARKING SHALL BE APPLIED AT A THICKNESS OF 90 MIL. THE APPROVED THERMOPLASTIC MARKING APPLICATION METHOD SHALL BE EITHER GRAVITY EXTRUSION OR RIBBON APPLICATION.
15. THE CONTRACTOR SHALL MARK ALL LOCATIONS IN THE FIELD IN WHICH PAVEMENT MARKINGS, SUCH AS LEGENDS, ARROWS, CROSSWALKS, STOP BARS, ETC., ARE TO BE PLACED. THE PAVEMENT MARKING LAYOUT SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR. THE CONTRACTOR SHALL OBTAIN CONCURRENCE FROM THE COUNTY PROJECT ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
16. WATER BLASTING IS THE ONLY APPROVED METHOD OF EXISTING STRIPE REMOVAL. THE USE OF BLACK PAINT AS A METHOD OF REMOVING OR COVERING EXISTING STRIPING IS STRICTLY PROHIBITED. WHEN WATER BLASTING ON OPEN GRADED FRICTION COURSE (OGFC), OR ON THE FINAL LIFT OF THE EXISTING PAVEMENT, THE CONTRACTOR SHALL APPLY A SEAL TO THE WATER BLASTED AREA. THIS SEAL SHALL BE INCIDENTAL TO REMOVAL OF THE PAVEMENT STRIPE AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.



SAN JUAN COUNTY
BRIDGE 8111

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CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
SIGNING AND STRIPING GENERAL NOTES

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CONSTRUCTION



SAN JUAN COUNTY
BRIDGE 8111

NO.	1	DESCRIPTION	DATE	BY
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CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
PERMANENT SIGNING AND STRIPING QUANTITIES

PANEL SIGN QUANTITIES

REF. SHEET	SIGN CODE	LOCATION	WIDTH OF SIGN	HEIGHT OF SIGN	701000 - Panel Signs		STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS										REMARKS
							MOUNTING REQUIREMENTS										
					POST LENGTH				SQUARE TUBING				BASE POST				
					NO. OF SIGNS 2-LANE	TOTAL SIGN AREA 2-LANE	LEFT	CENTER	RIGHT	TOTAL	1.75" X 1.75"	2.00" X 2.00"	2.25" X 2.25"	2.5" X 2.5"	NO.	TOTAL	
IN.	IN.	EACH	SF.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.										
BRIDGE 8111 (COUNTY RD 3500 & FLORA VISTA ARROYO)																	
x	OM3-R	101+21.31	12	36	1	3		7			7	X				1	7
x	OM3-L	101+43.23	12	36	1	3		7			7	X				1	7
x	OM3-L	102+50.65	12	36	1	3		7			7	X				1	7
x	OM3-R	102+74.30	12	36	1	3		7			7	X				1	7
PROJECT TOTAL						12		28			28	4				4	28
PROJECT USE						12		28			28	4				4	28

PERMANENT STRIPING QUANTITIES

ITEM NUMBER	STATION TO	STATION	DESCRIPTION	UNITS	SUBTOTAL	PROJECT TOTAL	REMARKS
SAN JUAN COUNTRY ROAD 3500 (NORTHBOUND)							
X	100+13.00	- 103+50.00	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID YELLOW)	L.F.	337.00	337.00	STRIPING FOR TRAFFIC CONTROL PHASING
X	100+13.00	- 102+53.66	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID WHITE)	L.F.	240.66	241.00	STRIPING FOR TRAFFIC CONTROL PHASING
X	103+14.56	- 103+50.00	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID WHITE)	L.F.	35.44	36.00	STRIPING FOR TRAFFIC CONTROL PHASING
SAN JUAN COUNTY RD 3500 NB - 4" STRIPING						614	
SAN JUAN COUNTRY ROAD 3500 (SOUTHBOUND)							
X	100+13.00	- 103+50.00	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID YELLOW)	L.F.	337.00	337.00	STRIPING FOR TRAFFIC CONTROL PHASING
X	100+13.00	- 100+42.71	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID WHITE)	L.F.	29.71	30.00	STRIPING FOR TRAFFIC CONTROL PHASING
X	101+27.63	- 103+50.00	RETROREFLECTORIZED PAINTED MARKINGS 4" (SOLID WHITE)	L.F.	222.37	223.00	STRIPING FOR TRAFFIC CONTROL PHASING
SAN JUAN COUNTY RD 3500 SB - 4" STRIPING						590	
PROJECT TOTAL						1,204	

60% NOT FOR CONSTRUCTION



W9-12



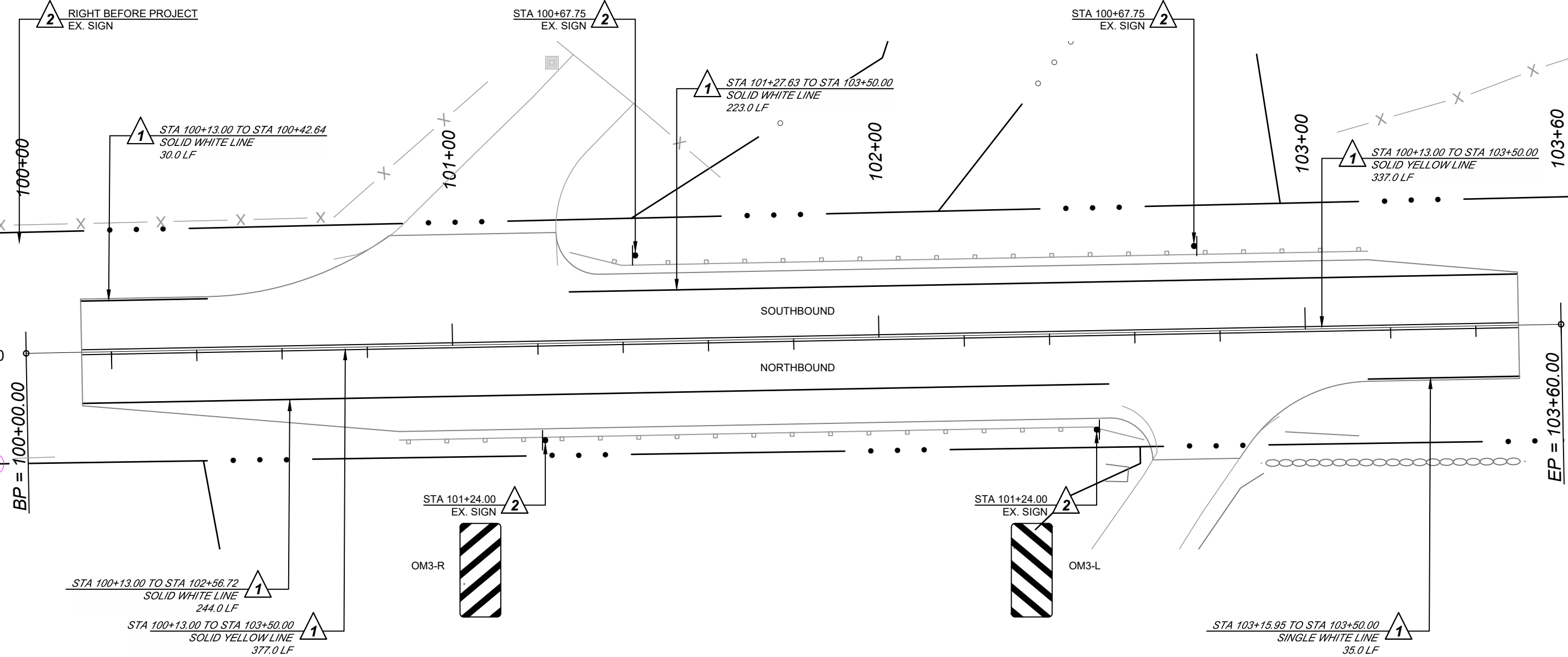
OM3-L



OM3-R



SAN JUAN COUNTY
BRIDGE 8111



- SIGNING AND STRIPING NOTES**
- 1 4" PAVEMENT STRIPING.
 - 2 REMOVE AND REPLACE EXISTING SIGN. WORK COMPLETED BY COUNTY.

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CR 3500 OVER FLORA VISTA ARROYO
BRIDGE 8111
PERMANENT SIGNING AND STRIPING

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CONSTRUCTION



GEOTECHNICAL ENGINEERING REPORT

BR3121 AND BR8111 BRIDGE REPLACEMENTS SAN JUAN COUNTY, NEW MEXICO

Submitted To:
Erin Provo, P.E.
T.Y. Lin International
500 4th Street NW #403
Albuquerque, New Mexico 87102

GEOMAT PROJECT NO. 222-4142
January 30, 2023

GEOMAT Inc.
915 Malta Avenue
Farmington, New Mexico 87401





Farmington, NM ♦ (505) 327-7928 ♦ Rio Rancho, NM ♦ (505) 300-5816

January 30, 2023

Erin Provo, P.E.

T.Y.Lin International
500 4th Street NW #403
Albuquerque, New Mexico 87102

RE: Geotechnical Engineering Report
BR3121 and BR8111 Bridge Replacements
Flora Vista, New Mexico
GEOMAT Project No. 222-4142

GEOMAT Inc. (GEOMAT) has completed the geotechnical engineering exploration for the proposed replacement of bridges BR3121 on County Road 3000 across Jones Arroyo and BR8111 on County Road 3500 across Flora Vista Arroyo in San Juan County, New Mexico. This study was performed in general accordance with our Proposal No. 222-06-28, dated June 15, 2022.

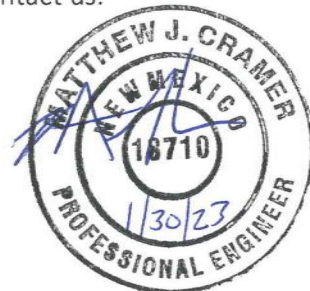
The results of our engineering study, including the geotechnical recommendations, site plan, boring records, and laboratory test results are attached. Based on the geotechnical engineering analyses, subsurface exploration and laboratory test results, the proposed drainage structures could be supported on shallow spread footings bearing on compacted soils or deep foundations as described herein. Other design and construction details, based upon geotechnical conditions, are presented in the report.

We have appreciated being of service to you in the geotechnical engineering phase of this project. If you have any questions concerning this report, please contact us.

Sincerely yours,

GEOMAT Inc.

Chase J. Beckstead, E.I.
Staff Engineer



Matthew J. Cramer, P.E.
President, Principal

Copies to: Addressee (1)

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-

EXECUTIVE SUMMARY

The BR 3121 and BR8111 replacement project consists of two existing steel bridges that will be demolished and replaced with a new multi-plate structural arch culverts with more detail provided in section 2.0. The following summarizes our general conclusions and recommendations in support of the project:

Based on the geotechnical engineering analyses, subsurface exploration and laboratory test results, the site is considered suitable for the proposed culverts.

Compressible soils were encountered at both sites. These soils could cause movement and subsequent distress to structures supported directly on them.

- BR 3121 could be supported on deep foundations with grade beams.
- BR 8111 could be supported by concrete spread footings bearing on compacted soils overlying geogrid reinforcement as described in the recommended foundation systems section of this report.

Groundwater was encountered in borings B-1, B-2, B-3, and B-4 at 21, 20, 28, and 29 feet, respectively, during drilling operations.

Seismic Site Classification

BR 3121 – Site Class C

BR 8111 – Site Class D

Laboratory corrosion potential tests indicated that the on-site soils are:

- severely corrosive to concrete.
- Moderately to highly corrosive to steel.

Recommended asphalt sections include:

BR 3121

- 4.5 inches of hot mix asphalt
- 8.0 inches of aggregate base course

BR 8111

- 4.0 inches of hot mix asphalt
 - 8.0 inches of aggregate base course
-

1.0 INTRODUCTION

This report contains the results of our geotechnical engineering exploration for the proposed replacement of bridges BR3121 and BR8111 located in San Juan County, New Mexico, as shown on the Site Plans in Appendix A of this report.

The purpose of these services is to provide information and geotechnical engineering recommendations about:

- subsurface soil conditions
- groundwater conditions
- foundation design and construction
- lateral soil pressures
- seismic site classification
- earthwork
- drainage

The opinions and recommendations contained in this report are based upon the results of field and laboratory testing, engineering analyses, and experience with similar soil conditions, structures, and our understanding of the proposed project as stated below.

2.0 PROPOSED CONSTRUCTION

We understand that the project includes two existing two-lane bridge sites located on County Road 3000 across Jones Arroyo (BR3121) and on County Road 3500 across Flora Vista Arroyo (BR8111) in San Juan County, NM. Both bridges are steel structures constructed in the late 1960's or early 1970's. We understand that the existing bridges at both locations will be demolished and replaced with new multi-plate steel arch culverts. The structural arch culverts will be supported on continuous spread footings or continuous grade beams on deep foundations. Based upon preliminary plan and profile drawings provided, we understand that the footings BR 3121 will be founded approximately 22 feet below the existing roadway elevation and BR 8111 will be founded approximately 27 feet below the existing roadway elevation. Preliminary structural loads were provided by T.Y Lin with loads of approximately 19 kips per foot at BR 3121 and 33 kips per foot at BR 8111. Both locations will include wingwalls which were preliminary at the time of this report.

We anticipate that the new roadways will match the elevations of the existing roadways. It is our understanding that the roadways will be replaced with flexible asphalt concrete pavement sections.

We understand that NMDOT specifications will be used for the project but there will not be NMDOT oversight or reviews.

3.0 SITE EXPLORATION

Our scope of services performed for this project included a site reconnaissance, a subsurface exploration program, laboratory testing and engineering analyses.

3.1 Field Exploration:

Subsurface conditions at the sites were explored on September 6 & 7, 2022 by drilling four exploratory borings at the approximate locations shown on the Site Plans in Appendix A. The borings were drilled adjacent to the existing roadway as close to the arroyos as practicable. The borings were drilled to the intended depths of approximately 45 feet below existing site grade (bgs).

The borings were advanced using a CME-55 truck-mounted drill rig with continuous-flight, 7.25-inch O.D. hollow-stem auger. The borings were continuously monitored by a staff professional from our office who examined and classified the subsurface materials encountered, obtained representative samples, observed groundwater conditions, and maintained a continuous log of each boring.

Soil samples were obtained from the borings using a combination of standard 2-inch O.D. split spoon and 3-inch O.D. modified California ring barrel samplers. The samplers were driven using a 140-pound hammer falling 30 inches. The standard penetration resistance was determined by recording the number of hammer blows required to advance the sampler in six-inch increments. Representative bulk samples of subsurface materials were also obtained.

Groundwater evaluations were made in each boring at the time of site exploration. Soils were classified in accordance with the Unified Soil Classification System described in Appendix A. Boring logs were prepared and are presented in Appendix A.

3.2 Laboratory Testing:

Samples retrieved during the field exploration were transported to our laboratory for further evaluation. At that time, the field descriptions were confirmed or modified as necessary, and laboratory tests were performed to evaluate the engineering properties of the subsurface materials.

4.0 SITE CONDITIONS

The project sites consist of two existing two-lane bridge sites located on County Road 3000 across Jones Arroyo (BR3121) and on County Road 3500 across Flora Vista Arroyo (BR8111) in rural San Juan County, NM. BR3121 is located 1.14 miles along Road 3000 just north of the Road 3312 and south of Road 3307. BR8111 is located 0.37 miles along Road 3500 just south of the First Baptist Church and 650 feet north of Hooked Up Towing & Recovery.

The arroyos are between 50 and 100 feet wide at the crossing locations, and approximately 20 to 25 feet deep, respectively. The existing crossing structures are steel framed bridges. Active flowing surface water was present in the arroyo crossings at the time of our exploration. The channel crossings are generally characterized by steep terrain and vegetated by a moderate to heavy overgrowth of native grasses, brush, and cottonwood trees. The following photographs depict the sites at the time of our exploration.



Photograph 1: BR 3121
View to the North



Photograph 2: BR 3121 Underside
View to the East



Photograph 3: BR 8111
View to the South



Photograph 4: BR 8111 Underside and Embankment Stabilization
View to the Southwest

5.0 SUBSURFACE CONDITIONS

5.1 BR3121

As presented on the Boring Logs in Appendix A, in the bridge borings at BR3121 (B-1 and B-2), we encountered predominately alluvial sands with interlayered clay lenses overlying formational rock.

Boring B-1 and B-2 soil deposits consisted of silty sand ranging in thickness from approximately 14 to 15 feet, overlying poorly graded sand extending to depths of approximately 25 feet below existing ground surface. Below the poorly grade sand soils, we encountered clay extending to depths of 29 feet, overlying poorly graded sand extending to depths of approximately 41 to 43 feet below existing ground surface. The soils were generally slightly damp to damp above the water table and wet below the water table. Sampling of soils below the water table was difficult or not possible due to heaving sand conditions. Below the poorly graded sand soils, we encountered siltstone bedrock extending to the total depths explored. The rock was generally bluish gray, dry to slightly damp and moderately to highly weathered.

5.2 BR8111

In the bridge borings at BR8111 (B-3 and B-4), we encountered stratified alluvial sand and clay lenses. In the roadway approach boring B-3, we encountered an existing pavement section consisting of approximately 7 inches of asphalt concrete, over approximately 6 inches of aggregate base course. Below the pavement section, we encountered silty sand extending to approximately 10 feet, overlying poorly graded sand extending to the total depth explored (45 feet). Boring B-4 soil deposits consisted of silty sand approximately 10 feet thick, overlying poorly graded sand extending to the total depth explored (45 feet). In both borings, the soils were generally slightly damp to damp above the water table and wet below the water table. Soft drilling conditions in borings B-3 and B-4 met little to no auger resistance below the water table. Sampling of soils below the water table was difficult or not possible due to heaving sand conditions.

Conditions encountered at each boring location are indicated on the individual logs. Stratification boundaries on the logs represent the approximate location of changes in soil; in situ, the transition between materials may be gradual.

5.3 Groundwater Conditions

Groundwater elevations can fluctuate over time depending upon precipitation, irrigation, runoff, and infiltration of surface water. We do not have any information regarding the historical fluctuation of the groundwater level in the vicinity of these bridges.

The following table shows the groundwater depth and depth to the top of formational rock in each boring.

Depth to Groundwater and Top of Formational Rock ¹		
Boring No.	Groundwater During Drilling (ft)	Top of Formational Rock (ft)
B-1	21	41
B-2	20	43
B-3	28	Not Encountered ²
B-4	29	Not Encountered ²

¹Depth in feet below existing ground surface.

²Not encountered to depth explored (45 feet) in B-3 and B-4.

5.4 Laboratory Test Results

Laboratory analyses of representative samples collected during the time of drilling indicate the sandy soils have fines contents (silt- and/or clay-sized particles passing the U.S. No. 200 sieve) ranging from approximately 6 to 24 percent and were found to be non-plastic.

Laboratory analyses of representative samples collected from the soil borings indicate the clayey soils from BR 3121 have fines contents (silt- and/or clay-sized particles passing the U.S. No. 200 sieve) ranging from approximately 80 to 88 percent, with plasticity indices ranging from 12 to 21.

Laboratory consolidation/expansion testing was performed on undisturbed ring samples of the subgrade soils in the vicinity of the proposed structures. Results of these tests indicate that the soils undergo moderate to severe compression when subjected to anticipated foundation stresses at the existing moisture contents. When subjected to increased moisture conditions at these stresses, they undergo additional slight to moderate compression.

Results of all laboratory tests are presented in Appendix B.

6.0 OPINIONS AND RECOMMENDATIONS

6.1 Geotechnical Considerations

The site is considered suitable for the proposed drainage structures based on the geotechnical conditions encountered and tested for this report. However, compressible soils were encountered at the sites both under current and saturated conditions. These soils could cause movement and subsequent distress to structures supported directly on them. To reduce the potential for settlement and provide more uniform and higher allowable bearing pressures, foundations for arch structures should bear on compacted soils or deep foundations.

Groundwater was encountered at depths ranging from approximately 20 to 21 feet below existing site grade at boring locations B-1 and B-2 near BR 3121 and approximately 28 to 29 feet below existing site grade at boring locations B-3 and B-4 near BR 8111 at the time of our field exploration. Based on our understanding of the type and elevations of the structures to be built, we anticipate that groundwater may be encountered during excavation for the foundations and/or construction of the arches/culverts.

If groundwater is encountered during construction of the new drainage structures, we anticipate that dewatering techniques will be required to construct footings for the structures. Dewatering could be accomplished by diverting and/or pumping water from the excavations. It may also be possible to temporarily lower the water table in the immediate area by pumping water from a series of dewatering well points connected to a manifold system.

Difficulties in earthwork near the groundwater table may be improved by the use of deep foundation members, particularly at the BR3121 location at which formational rock was encountered at relatively shallow depths. Recommendations for deep foundation systems at this location are included herein.

In addition, the final footing depth may be controlled by a scour analysis which will be performed by T. Y. Lin. If there are any significant deviations from the assumed finished elevations, structure locations and/or design conditions noted at the beginning of this report, the opinions and recommendations of this report should be reviewed and confirmed/modified as necessary to reflect the final planned design conditions. Additionally, borings were advanced as close as practical to the wash location. As such, actual conditions encountered during construction may vary. GEOMAT should be retained to observe the actual conditions during construction and modify our recommendations as appropriate.

7.0 RECOMMENDED FOUNDATION SYSTEMS

7.1 BR 3121 Geotechnical Foundation Considerations

7.1.1 Drilled Shaft or Auger Cast Pile Foundations:

Based on our understanding of the type of structure to be built and the results of our field subsurface exploration and laboratory testing, the culvert could be founded on drilled shafts or auger cast piles. The structural arch could be founded on grade beams supported by a drilled shaft or auger cast pile foundations bearing in formational bedrock. We anticipate that an equivalent allowable end bearing pressure of 30,000 psf can be used for the design of deep foundations bearing a minimum of 5 feet into formational rock. If necessary, an additional allowable downward capacity of 1,250 psf/ft can be achieved for each additional foot the shafts are extended beyond 5 feet into rock. Deep foundations may be designed with a minimum spacing of three (3) pier diameters (center to center) without reduction in capacity. GEOMAT should be contacted for group reduction capacities if deep foundation elements are to be installed at closer spacing.

The determination of whether to use drilled piers or auger cast piles should be determined by a contractor familiar with installation in similar subsurface conditions. Based upon the conditions encountered in our borings, we anticipate that groundwater will be encountered during drilling for piers or piles. Test shafts/piles may be required to determine the appropriate installation methods.

Final concrete quantities should be expected to exceed ideal geometric quantities, due to raveling and sloughing of the drilled shafts.

7.1.2 Lateral L-Pile Parameters:

The following design parameters should be used in conjunction with L-Pile analysis (designed by others) to determine the lateral capacity of the shafts:

Soil/Rock Parameters for LPILE Analysis (Allowable Values)									
Depths (ft)	Layers	Modeled Layers	γ' (pcf)	Friction Angle ϕ (deg)	Modulus k (pci)*	E_{ir} (psi)	Uni-Axial Compressive Strength (psi)**	RQD, %	Strain Factor (ϵ_{50} or ϵ_{rm})
0 – 21	Silty SAND to Poorly graded SAND	Sand (Reese) ¹	105	25	25	-	-	-	-
21 – 42	Poorly graded SAND	Sand (Reese) ²	65	58	20	-	-	-	-
Below 42'	Bluish-gray Siltstone	Weak Rock (Reese)	125	-	-	36,900	225	N/A	0.002

¹Unsaturated Conditions (Sand above water table)

²Saturated Conditions (Submerged Sand)

*Represents k for Sand

**Estimated

γ' – Effective Unit Weight

E_{ir} – Initial Modulus of Rock Mass

7.1.3 Drilled Shaft Construction

2 feet minimum diameter.
(addendum coming)

Drilled shafts should be a minimum of four (4.0) feet in diameter. Shafts should not be drilled within 10 feet of another shaft while the adjacent shaft is either open or the concrete in the shaft has not been in place for at least 12 hours. +/- 3 ft clear from existing H piles

Concrete should be placed in accordance with the American Concrete Institute (ACI) Specification for the Construction of Drilled Piers (ACI 336.1-01).

Concrete may be placed by free-falling, provided that concrete is guided so as not to hit the reinforcement, hole sides, or anchor bolt assemblies (ACI 336.1-01, Section 3.5.6). Placing concrete by free-falling is not recommended for shaft depths greater than 60 feet.

It is recommended that the following items concerning the installation of drilled shafts be addressed in the job specifications.

- a) A GEOMAT representative should be present at the site during drilling to observe and document the conditions encountered and to provide alternate recommendations, if applicable. All drilled shaft installation procedures and techniques and concrete placement shall be observed and documented by qualified geotechnical personnel.
- b) Holes shall be drilled or bored in such a manner as to provide the full-sized shaft diameter and length as specified on the drawings or in the specifications.
- c) Before and after placement of reinforcement cages and before placing concrete, the diameter, depth, and bearing stratum of each borehole must be verified by a representative of the owner (Geotechnical Engineer).
- d) Under no circumstances should concrete be allowed to free fall against shaft sides or reinforcing. Free-falling concrete should be guided so that it does not hit the reinforcement, hole sides, or anchor bolt assemblies.
- e) If the Geotechnical Engineer deems the bearing stratum as not capable of providing sufficient bearing support, the shaft length shall be extended as directed, or the diameter of the shaft should be enlarged.

- f) All loose material and slough shall be removed from drilled shafts before reinforcing and concrete placement. Excavate shaft bottoms to a level plane, as approved by the Geotechnical Engineer. If caving occurs or “slough” from the surface falls into the borehole after placement of the reinforcement cage, the reinforcement cage shall be removed, the bottom cleaned out, and reinforcement cage reinserted.
- g) It is anticipated that groundwater will be encountered. If groundwater is encountered or should drilling mud/slurry be necessary, tremie concrete placement methods, as described below, may be used.
- Drilled shafts shall be cleaned with a clean-out bucket, immediately before concrete placement.
 - The tremie or pump pipe shall have watertight joints.
 - During the initial concrete placement, the concrete tremie or pump pipe shall be extended to the bottom of the drilled shaft before concrete placement.
 - During placement of concrete, the bottom of the pipe shall be maintained below the top of the concrete at all times. If the seal is lost, the pipe shall be re-inserted and the operation restarted.
 - Sufficient embedment of the tremie or pump pipe in concrete shall be maintained throughout concrete placement to prevent re-entry of water. The minimum embedment depth shall be 5 feet.
 - The first-placed portion of concrete flow that comes to the top of the shaft shall be wasted, as determined by the Geotechnical Engineer.
 - Under no circumstances shall concrete be allowed to free fall through water or drilling fluid.
- h) The placement of concrete for each drilled shaft shall be completed in one placement before commencing the placement of concrete in another.
- i) Quantities of concrete placed for each drilled shaft shall be provided to the representative of the Owner.
-

- j) Concrete shall have an ultimate compressive strength of not less than that provided for in the specifications and shall be workable and plastic so that it may be placed without segregation. A slump of 6 to 8 inches is recommended.
- k) Concrete shall be cast-in-place against undisturbed earth in the holes in such a manner to provide for the exclusion of foreign matter in the concrete. Concrete shall not be dropped vertically into the dry excavation more than 60 feet unless an approved tremie (elephant trunk) or other similar approved method is used to prevent the concrete from striking the sides of the excavation.
- l) The Geotechnical Engineer should review drilled shaft spacing at the time of construction. To prevent blowout between drilled shafts, it may be necessary to place concrete and allow it to harden for at least 8 hours before drilling adjacent shafts.

The test drilling was performed using a truck-mounted, CME-55 drill rig with 7.25-inch-diameter augers. It is not possible to accurately correlate the auger drilling results with the ease or difficulty of excavation at the site with other types of equipment. We present the following general comments regarding excavatability for the designers' information with the understanding that they are opinions based on the test boring data. More accurate information regarding excavatability should be evaluated by contractors or other interested parties from test excavations using the equipment that will be used during construction. Based on the conditions encountered in our test borings, we anticipate that drilling to design depths may be possible with appropriate rotary or single-flight power augers.

7.1.4 Auger Cast Pile Construction:

If used, the following procedures are recommended for construction of the auger cast piles:

- a) A GEOMAT representative should be present at the site during drilling to observe and document the conditions encountered and to provide alternate recommendations, if applicable. All pile installation procedures and techniques and concrete placement shall be observed and documented by qualified geotechnical personnel.
 - b) Dimensions (diameters and depths) of the piles should be verified during drilling to evaluate whether the piles are advanced to the proper depths with the proper diameters.
 - c) Plumbness (within 1 percent of vertical) and alignment (within approximately 2 inches for the design location) of the pile should also be measured during construction.
-

- d) Cuttings encountered during the drilling process should be monitored by a representative of the geotechnical engineer to evaluate whether the soils and rock encountered are as anticipated.
- e) Grout injection pressures should be monitored during construction and should be maintained within a range of approximately 150 to 250 psi.
- f) The amount of grout injected into the pile should be monitored and should be expected to be approximately 10% greater than the calculated theoretical amount.
- g) Per the International Building Code, auger cast elements shall not be installed within six diameters center to center of an element filled with concrete or grout less than 12 hours old.

7.2 Grade Beams

If deep foundations are used, grade beams should be used to transmit loads between deep foundation locations. **The bottom of grade beams should be located a minimum of 30 inches below grade to reduce the potential for frost heave.**

7.3 BR 8111 Geotechnical Foundation Considerations

7.3.1 Corrugated Steel Arch Culvert w/ Concrete Spread Footings:

Based on our understanding of the type of structures to be built and the results of our field subsurface exploration and laboratory testing, the drainage structures could be supported on shallow spread footings bearing on a minimum of two (2.0) feet of compacted base course over Tensar TX-7 geogrid as described below.

Soils should be removed beneath the footings to the recommended elevations. Exposed subgrade at these elevations should be scarified and compacted as described in the [Site Clearing](#) section of this report. A separation fabric should be placed directly on top of prepared subgrade. The separation fabric should be a non-woven geotextile having a minimum weight of 8 ounces per square yard. Next, the Tensar TX-7 geogrid should be placed directly on top of the separation fabric in accordance with the manufacturer's recommendations. The recommended base course should then be placed in lifts not exceeding 10-inches in loose lift thickness and then compacted as described in the [Placement and Compaction](#) section of this report.

Adequate drainage should be provided to prevent the supporting soils from undergoing significant moisture changes. As previously noted, groundwater may be encountered at footing and over excavation depths and dewatering may be required to facilitate earthwork activities.

It is anticipated that footings supported on compacted base course over geogrid as described above can be designed for an allowable bearing pressure of 3,500 psf. Footings should be embedded a minimum of two feet below the lowest anticipated scour depth.

Total and differential settlements resulting from the assumed structural loads are estimated to be on the order of 1 inch or less. Proper drainage should be provided in the final design and during construction and areas adjacent to the structure should be designed to prevent water from ponding or accumulating next to the structure. Total and differential settlements should not exceed predicted values, provided that:

- Foundations are constructed as recommended, and
- Essentially no changes occur in water contents of foundation soils.

Footings and foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement.

Foundation excavations should be observed by GEOMAT. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

7.4 Scour

Information for scour depth was not available at the time of this report. Consideration should be given to implementing erosion-control measures to protect the culvert structures from scouring and undermining.

7.5 Lateral Earth Pressures

Recommended equivalent fluid pressures for unrestrained foundation elements above and below the water table are presented in the following table:

Lateral Earth Pressures				
Parameter	Equivalent Fluid Pressures (psf/ft)			Coefficient
	Active	At-Rest*	Passive	
Granular soil backfill	35 ^(a) / 20 ^(b)	50	--	--
Undisturbed subsoil	30 ^(a) / 15 ^(b)	60	--	--
Shallow foundation walls	--	--	250 ^(a) / 150 ^(b)	--
Shallow column footings	--	--	350 ^(a) / 175 ^(b)	--
Base Friction	--	--	--	0.40**

*Where the design includes restrained elements; the following equivalent fluid pressures are recommended
 **The coefficient of base friction should be reduced to 0.30 when used in conjunction with passive pressure.
^(a)Above the water table – excluding any hydrostatic pressures.
^(b)Below the water table – excluding any hydrostatic pressures.

7.6 Corrosion and Cement Type

Representative soil samples of the shallow subsurface material in two of the borings were tested for sulfate and chloride ion content, electrical resistivity, and pH. These tests were performed to help evaluate the potential for the soil to cause corrosion of concrete and/or metal. The results of these tests are presented in the following table.

Laboratory Corrosivity Test Results					
Sample No.	Boring No.	Sample Depth (ft)	pH	Resistivity (ohm-cm)	Sulfates (%)
9727	B-2	7.5	7.88	650	1.44
9742	B-4	12.0	8.25	2,500	0.03

7.6.1 Corrosion of Concrete:

The soluble sulfate contents of the samples tested ranged from 0.03 to 1.44 percent by weight, which may be characterized as **severe potential for corrosion** (IBC Table 1904.3). According to the American Concrete Institute Building Code 318, when the soluble sulfate content is greater than 0.21 percent by weight in soil, type V cement should be used and/or Type II cement with appropriately proportioned pozzolans. When sulfate content is below 0.05 percent by weight there are no restrictions on cement types.

7.6.2 Corrosion of Metals:

Corrosion of buried ferrous metals can occur when electrical current flows from the metal into the soil. As the resistivity of the soil decreases, the flow of electrical current increases, increasing the potential for corrosion. A commonly accepted correlation between soil resistivity and corrosion of ferrous metals is shown in the following table.

Metal Corrosion Potential	
Resistivity (ohm-cm)	Corrosivity
0 to 1,000	Severely Corrosive
1,000 to 2,000	Corrosive
2,000 to 10,000	Moderately Corrosive
>10,000	Mildly Corrosive

The samples tested had resistivity values ranging from 650 to 2,500 ohm-cm. Based on these laboratory results and the table above, the on-site soils would be characterized as **moderate to highly corrosive** toward ferrous metals. It should be noted that the resistivity is dependent upon variables such as the moisture and density condition of the soils. The laboratory resistivity tests represent the minimum (worst-case) resistivity of the soils tested and may not be representative of the soils in their in-situ condition. The potential for corrosion should be taken into account during the design process.

7.7 Site Classification

Based on the subsurface conditions encountered in the borings, we estimate that Site Class C is appropriate for the BR 3121 site and Site Class D is appropriate for the BR 8111 site according to Table 3.10.3.1-1 of the *AASHTO LRFD Bridge Design Specifications*, Eight Edition, 2017. This parameter was estimated based on the results of our exploratory drilling and review of a geologic map of the sites. Actual shear wave velocity testing/analysis were not performed as part of our scope of services for this project.

BR 3121 (Site Class C) SEISMIC DESIGN PARAMETERS

Parameter	Value
PGA	0.047g
S_S	0.105g
S_1	0.034g
A_S	0.057g
S_{D5}	0.127g
S_{D1}	0.057g

BR 8111 (Site Class D) SEISMIC DESIGN PARAMETERS

Parameter	Value
PGA	0.047g
S_S	0.105g
S_1	0.034g
A_S	0.076g
S_{D5}	0.170g
S_{D1}	0.081g

PGA = horizontal peak ground acceleration from Figure 3.10.2.1-1

S_S = horizontal response spectral acceleration at 0.2 second period from Figure 3.10.2.1-2

S_1 = horizontal response spectral acceleration at 1-second period from Figure 3.10.2.1-3

A_S = short-period site factor

S_{D5} = five percent damped design spectral response acceleration at short periods

S_{D1} = five percent damped design spectral response acceleration at 1-second period

g = gravitational acceleration, approximately 9.8 m/sec² or 32.2 ft/sec²

7.8 Pavement Design and Construction

Average Annual Daily Traffic (AADT) projections for both BR 3121 and BR 8111 were provided by T. Y. Lin. We understand that county road (CR) 3000 at BR 3121, has an approximate AADT of 2,031 vehicles. Traffic data was not available for BR 8111, but data provided from the nearby CR 3520 had an approximate AADT of 1,706 vehicles. We assumed that the truck traffic comprises approximately 5 percent of total traffic with a two-lane directionality factor of 0.5. We assumed a two percent ESAL growth rate over a 20-year design period.

Design of flexible pavements for the project has been based on the procedures outlined in the 1993 Guideline for Design of Pavement Structures by the American Association of State Highway and Transportation Officials (AASHTO). An estimated R-value of 40 was used in determination of both bridge pavement sections.

The recommended flexible pavement sections for both locations based upon a 20-year design life are presented in the tables below.

BR 3121 Pavement Design Parameters	
Input Parameter	Design Value
ESALS	1,492,000
Reliability	85
Initial Serviceability	4.2
Terminal Serviceability	2.0
Standard Deviation	0.5
R-Value	40
Asphalt Concrete Structural Coefficient	0.44
Base Course Structural Coefficient	0.13
Required Structural Number ¹	2.35

¹Required structural number based upon results of software analysis

Recommended BR 3121 Pavement Sections		
Material	Hot Mix Asphalt (inches)	Aggregate Base Course (inches)
Thickness	4.5	8.0

BR 8111 Pavement Design Parameters

Input Parameter	Design Value
ESALS	1,308,000
Reliability	85
Initial Serviceability	4.2
Terminal Serviceability	2.0
Standard Deviation	0.5
R-Value	40
Asphalt Concrete Structural Coefficient	0.44
Base Course Structural Coefficient	0.13
Required Structural Number ¹	2.30

¹Required structural number based upon results of software analysis

Recommended BR 8111 Pavement Sections

Material	Hot Mix Asphalt (inches)	Aggregate Base Course (inches)
Thickness	4.0	8.0

7.8.1 Construction Recommendations for Asphalt Pavements:

In paved areas, soils should be scarified to a minimum depth of 12 inches and watered as necessary to bring the upper 12 inches to within ± 2 percent of optimum moisture content and compacted to a minimum of 95 percent of ASTM D1557 maximum dry density prior to construction of pavement sections.

After preparation of the pavement subgrade, the areas to be paved should be proof-rolled under the observation of a representative of GEOMAT. The proof-rolling should be conducted utilizing a fully loaded, single axle water truck with a minimum 2,000 gallon capacity or other vehicle that will provide an equivalent weight on the subgrade. The proof-rolling should consist of driving the truck across all the areas to be paved with asphalt at a slow speed (less than 5 mph) and observing any deflections or distress caused to the subgrade. Areas that show distress should be repaired by removing and replacing the soft material with suitable fill.

7.8.2 Asphalt Pavements:

Aggregate base course should conform to Section 303 of the NMDOT specifications for Type I Base Course. Aggregate base course should be placed in lifts not exceeding 6 inches and should be compacted to a minimum of 95% Modified Proctor density (ASTM D1557), within a moisture content range of 4 percent below, to 2 percent above optimum. In any areas where base course thickness exceeds 6 inches, the material should be placed and compacted in two or more lifts of equal thickness.

If the hot-mix asphalt (HMA) is placed in more than one mat, the surface of each underlying mat should be treated with a tack coat immediately prior to placement of the subsequent mat of hot-mix asphalt.

Asphalt concrete should be obtained from an engineer-approved mix design prepared in accordance with NMDOT specifications. The hot-mix paving should be placed and compacted in accordance with NMDOT specifications. HMA should be either an SP-III, SP-IV, or SP-V mix complying with the requirements of section 416, Minor Paving of the 2019 NMDOT Specifications. HMA lift thicknesses should comply with the following:

HMA Lift Thicknesses		
HMA Type	Minimum Lift Thickness (inches)	Maximum Lift Thickness (inches)
SP-III	2.5	3.5
SP-IV	1.5	3.0
SP-V	0.75	1.5

7.8.3 General Pavement Considerations:

The performance of the recommended pavement sections can be enhanced by minimizing excess moisture that can reach the subgrade soils.

The following recommendations should be considered at minimum:

- Site grading at a minimum 2% grade away from the pavements;
- Compaction of any utility trenches to the same criteria as the pavement subgrade

The recommended pavement sections are considered minimal sections based on the anticipated traffic volumes and the subgrade conditions encountered during our exploration. They are expected to perform adequately when used in conjunction with preventive maintenance and good drainage. Preventive maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment.

7.9 Slopes

Assuming fill specifications, compaction requirements, and recommended setbacks provided in this report are followed, cut and fill slopes as steep as to 2.5:1 (horizontal:vertical) should be stable. Depending upon specific project conditions, adequate factors of safety against slope failure may be available for steeper configurations. However, such a determination would require additional analysis.

7.10 Earthwork

7.10.1 General Considerations:

The opinions contained in this report for the proposed construction are contingent upon compliance with recommendations presented in this section. Although underground facilities were not encountered during site reconnaissance, such features could exist and might be encountered during construction. If unexpected underground facilities are encountered, such features should be removed, and the excavation benched to expose firm, approved materials prior to backfill placement and/or construction.

7.10.2 Site Clearing:

The following site clearing recommendations should be considered at minimum:

- a) Strip and remove all existing pavement, fill, debris, and other deleterious materials from the proposed building areas. Any existing structures should be completely removed from below any building, including foundation elements and any associated development such as underground utilities, septic tanks, etc. All exposed surfaces below footings and slabs should be free of mounds and depressions which could prevent uniform compaction.
 - b) If unexpected fills or underground facilities are encountered during site clearing, we should be contacted for further recommendations. All excavations should be observed by GEOMAT prior to backfill placement.
-

- c) Stripped materials consisting of vegetation and organic materials should be removed from the site or used to re-vegetate exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on-site, they should be placed in non-structural areas, and in fill sections not exceeding five feet in height.
- d) Sloping areas steeper than 5:1 (horizontal:vertical) should be benched to reduce the potential for slippage between existing slopes and fills. Benches should be level and wide enough to accommodate compaction and earth moving equipment.
- e) All exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of eight inches, conditioned to near optimum moisture content, and compacted to at least 95% of modified proctor (ASTM D1557).

7.10.3 Excavation:

- a) We present the following general comments regarding our opinion of the excavation conditions for the designers' information with the understanding that they are opinions based on our boring data. More accurate information regarding the excavation conditions should be evaluated by contractors or other interested parties from test excavations using the equipment that will be used during construction. Based on our subsurface evaluation it appears that excavations in soils at the site will be possible using standard excavation equipment.
- b) On-site soils may pump or become unstable or unworkable at high water contents, especially for excavations near the water table. Dewatering may be necessary to achieve a stable excavation. Workability may be improved by scarifying and drying. Over-excavation of wet zones and replacement with granular materials may be necessary. Lightweight excavation equipment may be required to reduce subgrade pumping.

7.10.4 Fill Material:

- a) If required, native or imported soils with low expansive potentials could be used as fill material for the following:
 - ⊖ general site grading
 - ⊖ foundation areas
 - ⊖ foundation backfill
 - ⊖ pavement areas
 - b) Select granular materials should be used as backfill behind walls that retain earth.
-

- c) On site or imported soils to be used in structural (engineered) fills should conform to the following:

Recommended Engineered Fill Properties	
Sieve Size or Diameter (in)	Percent Finer by Weight (ASTM C136)
3" Sieve	100
No. 4 Sieve	50 – 100
No. 200 Sieve	50 Max
Maximum Expansive Potential (%)*	+1.5

* Measured on a sample compacted to approximately 95 percent of the ASTM D1557 maximum dry density at about 3 percent below optimum water content. The sample is confined under a 144-psf surcharge and submerged.

- d) Aggregate base should conform to NMDOT Specifications for Base Course.

7.10.5 Placement and Compaction:

The following placement and compaction recommendations should be considered at minimum:

- a) Place and compact fill in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift.
- b) Un-compacted fill lifts should not exceed 10 inches loose thickness.
- c) On-site and imported soils should be compacted at moisture contents within three percent of optimum unless modified by the project geotechnical engineer.
- d) Materials should be compacted to the following:

Recommended Field Compaction

Material	Minimum Percent (ASTM D1557)
Subgrade soils beneath fill areas	95
On-site or imported soil fills	95
Miscellaneous backfill	90

7.10.6 Compliance:

Recommendations for slabs-on-grade and foundation elements supported on compacted fills depend upon compliance with [Earthwork](#) recommendations. To assess compliance, observation and testing should be performed by GEOMAT.

7.11 Drainage

7.11.1 Surface Drainage:

The ground surface around the drainage structures should be sloped appropriately so that water does not pond around the structures. Infiltration of water into foundation excavations must be prevented during construction. Backfill against footings and exterior walls should be well compacted and free of all construction debris to reduce the possibility of water infiltration. After construction and prior to project completion, we recommend that verification of final grading be performed to document that positive drainage, as described above, has been achieved.

8.0 GENERAL COMMENTS

It is recommended that GEOMAT be retained to provide a general review of final design plans and specifications in order to confirm that grading and foundation recommendations in this report have been interpreted and implemented. In the event that any changes of the proposed project are planned, the opinions and recommendations contained in this report should be reviewed and the report modified or supplemented as necessary.

GEOMAT should also be retained to provide services during excavation, grading, foundation, and construction phases of the work. Observation of footing excavations should be performed prior to placement of reinforcing and concrete to confirm that satisfactory bearing materials are present and is considered a necessary part of continuing geotechnical engineering services for the project. Construction testing, including field and laboratory evaluation of fill, backfill, pavement materials, concrete and steel should be performed to determine whether applicable project requirements have been met.

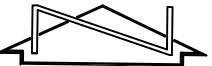
The analyses and recommendations in this report are based in part upon data obtained from the field exploration. The nature and extent of variations beyond the location of test borings may not become evident until construction. If variations then appear evident, it may be necessary to re-evaluate the recommendations of this report.

Our professional services were performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities at the same time. No warranty, express or implied, is intended or made. We prepared the report as an aid in design of the proposed project. This report is not a bidding document. Any contractor reviewing this report must draw his own conclusions regarding site conditions and specific construction equipment and techniques to be used on this project.

This report is for the exclusive purpose of providing geotechnical engineering and/or testing information and recommendations. The scope of services for this project does not include, either specifically or by implication, any environmental assessment of the site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such contamination, other studies should be undertaken. This report has also not addressed any geologic hazards that may exist on or near the site.

This report may be used only by the Client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on and off site), or other factors may change over time and additional work may be required with the passage of time. Any party, other than the Client, who wishes to use this report, shall notify GEOMAT in writing of such intended use. Based on the intended use of the report, GEOMAT may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements, by the Client or anyone else, will release GEOMAT from any liability resulting from the use of this report by an unauthorized party.

Appendix A

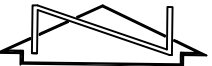

Approximate
Not to Scale

SITE PLAN
Boring Locations (approximate)
GEOMAT Project No. 222-4142 Date Explored: September 6, 2022

PROJECT
BR3121 Borings Flora Vista, New Mexico





 Approximate Not to Scale	SITE PLAN	PROJECT	
	Boring Locations (approximate)		
	GEOMAT Project No. 222-4142 Date Explored: September 7, 2022		
BR8111 Borings Flora Vista, New Mexico			



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Boring B-1

Page 1 of 1

Project Name: <u>BR 3121 & BR 8111 Replacements</u>	Date Drilled: <u>9/6/2022</u>
Project Number: <u>222-4142</u>	Latitude: <u>Not Determined</u>
Client: <u>T. Y. Lin</u>	Longitude: <u>Not Determined</u>
Site Location: <u>Flora Vista, NM</u>	Elevation: <u>Not Determined</u>
Rig Type: <u>CME-55</u>	Boring Location: <u>BR 3121</u>
Drilling Method: <u>7.25" O.D. Hollow Stem Auger</u>	Groundwater Depth: <u>21 Feet</u>
Sampling Method: <u>Bulk and Ring samples</u>	Logged By: <u>CB</u>
Hammer Weight: <u>140 lbs</u>	Remarks: _____
Hammer Fall: <u>30 inches</u>	

Laboratory Results				Blows per 6"	Sample Type & Length (in)	Symbol	Material Type	Soil Symbol	Depth (ft)	Soil Description
Dry Density (pcf)	% Passing #200 Sieve	Plasticity Index	Moisture Content (%)							
							FILL		1	3/4" Gravel driveway, approx. thickness 6"
				5-5	R	⬢			2	Silty SAND, light brown/brown, fine- to coarse-grained, slightly damp to damp
				3-3-3	SS	⊗			3	
									4	
									5	
100.8	-	-	2.4	5-5	R	⬢	SM		6	tan/gray, fine- to medium-grained, slightly damp to damp
									7	
									8	interlayered with sandy clay lens, tan/brown, slightly damp
									9	
									10	
									11	sandy clay lens
									12	
									13	
									14	
94.6	-	-	7.3	4-6	R	⬢			15	Poorly graded SAND, light brown/tan, fine- to coarse-grained, damp to wet
									16	
									17	clay lens, brown
									18	
									19	
									20	
									21	
									22	
									23	
									24	
107.1	-	-	19.0	3-2	R	⬢			25	medium- to coarse-grained, brown
									26	Lean CLAY, light brown, damp
									27	
									28	
									29	
									30	Poorly graded SAND, light brown/tan, fine- to coarse-grained, damp to wet
									31	
									32	trace gravel, tan/gray, fine- to coarse-grained, subrounded to round particles
									33	
									34	
									35	
									36	soft augering, no samples recovered due to heaving sand
									37	
									38	
									39	
									40	
									41	
									42	Auger refusal on bedrock
									43	
									44	Total Depth 42 feet
									45	
									46	
									47	
									48	
									49	
									50	

GEOMAT 222-4142.GPJ GEOMAT.GDT 1/27/23

A = Auger Cuttings R = Ring-Lined Barrel Sampler SS = Split Spoon GRAB = Manual Grab Sample D = Disturbed Bulk Sample SH = Shelby Tube Sampler



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Boring B-2

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Project Name: <u>BR 3121 & BR 8111 Replacements</u>	Date Drilled: <u>9/6/2022</u>
Project Number: <u>222-4142</u>	Latitude: <u>Not Determined</u>
Client: <u>T. Y. Lin</u>	Longitude: <u>Not Determined</u>
Site Location: <u>Flora Vista, NM</u>	Elevation: <u>Not Determined</u>
Rig Type: <u>CME-55</u>	Boring Location: <u>BR 3121</u>
Drilling Method: <u>7.25" O.D. Hollow Stem Auger</u>	Groundwater Depth: <u>20 Feet</u>
Sampling Method: <u>Bulk and Ring samples</u>	Logged By: <u>CB</u>
Hammer Weight: <u>140 lbs</u>	Remarks: _____
Hammer Fall: <u>30 inches</u>	

Laboratory Results				Blows per 6"	Sample Type & Length (in)	Symbol	Material Type	Soil Symbol	Depth (ft)	Soil Description
Dry Density (pcf)	% Passing #200 Sieve	Plasticity Index	Moisture Content (%)							
-	22	NP	8.6	3-2-3	SS				1	Silty SAND, some cobbles and gravels, tan/light brown, fine- to coarse-grained, slightly damp
97.1	-	-	13.6	5-7	R		SM		2	
				5-3-3	SS				3	
				6-5	R		SC		4	
100.8	-	-	7.6	6-5	R		SC		5	
				6-5	R				6	Poorly graded SAND, light brown, fine- to medium-grained, subrounded to rounded particles, damp
97.5	-	-	10.5	6-5	R				7	
				5-4	R		SP		8	
				5-4	R		SP		9	
				5-4	R		SP		10	
				5-4	R		SP		11	Lean CLAY, light brown, damp
				5-4	R		SP		12	
				5-4	R		SP		13	
				5-4	R		SP		14	
				5-4	R		SP		15	
				3-2-4	SS		CL		16	Lean CLAY, light brown, damp
				3-2-4	SS		CL		17	
				3-2-4	SS		CL		18	
				3-2-4	SS		CL		19	
				3-2-4	SS		CL		20	
				3-3	R				21	Poorly graded SAND, light brown, fine- to medium-grained, subrounded to rounded particles, wet
				3-3	R				22	
				3-3	R				23	
				3-3	R				24	
				3-3	R				25	
				3-3	R				26	soft augering, no samples recovered due to heaving sand
				3-3	R				27	
				3-3	R				28	
				3-3	R				29	
				3-3	R				30	
				3-3	R				31	SILTSTONE, bluish gray, slightly damp
				3-3	R				32	
				3-3	R				33	
				3-3	R				34	
				3-3	R				35	
				3-3	R		RK		36	SILTSTONE, bluish gray, slightly damp
				3-3	R		RK		37	
				3-3	R		RK		38	
				3-3	R		RK		39	
				3-3	R		RK		40	
									41	Total Depth 45 feet
									42	
									43	
									44	
									45	
									46	
									47	
									48	
									49	
									50	

GEOMAT 222-4142.GPJ GEOMAT.GDT 1/27/23

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Boring B-3

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Project Name: <u>BR 3121 & BR 8111 Replacements</u>	Date Drilled: <u>9/7/2022</u>
Project Number: <u>222-4142</u>	Latitude: <u>Not Determined</u>
Client: <u>T. Y. Lin</u>	Longitude: <u>Not Determined</u>
Site Location: <u>Flora Vista, NM</u>	Elevation: <u>Not Determined</u>
Rig Type: <u>CME-55</u>	Boring Location: <u>BR 8111</u>
Drilling Method: <u>7.25" O.D. Hollow Stem Auger</u>	Groundwater Depth: <u>28 Feet</u>
Sampling Method: <u>Bulk and Ring samples</u>	Logged By: <u>CB</u>
Hammer Weight: <u>140 lbs</u>	Remarks: _____
Hammer Fall: <u>30 inches</u>	

Laboratory Results				Blows per 6"	Sample Type & Length (in)	Symbol	Material Type	Soil Symbol	Depth (ft)	Soil Description
Dry Density (pcf)	% Passing #200 Sieve	Plasticity Index	Moisture Content (%)							
				8-7-6	SS	⊗	ACP ABC	Asphalt Concrete, approx. thickness 7"	1	
				3-5	R	⊗	SM	Aggregate Base Course, approx. thickness 6"	2	
97.2	-	-	3.7	5-4-5	SS	⊗		Silty SAND, tan/light brown, fine- to coarse-grained, slightly damp	3	
-	18	NP	3.5	3-5	R	⊗		brown	4	
98.8	-	-	3.8	3-3-3	SS	⊗		light brown/brown, trace gravel	5	
-	6.6	NP	3.3	7-9	R	⊗		tan, fine- to medium-grained	6	
99.4	-	-	2.8	4-5-5	SS	⊗	SP- SM	Poorly graded SAND with silt, tan, fine- to medium-grained, slightly damp	7	
				6-8	R	⊗		clay lens, slightly damp	8	
				3-5-10	SS	⊗		brown	9	
								medium- to coarse-grained	10	
								light brown, fine- to coarse-grained, damp	11	
								brown, fine- to medium-grained, wet	12	
								fine- to coarse-grained	13	
								soft augering, no samples recovered due to heaving sand	14	
								soft, little to no auger resistance, no sampling due to heaving sand	15	
									16	
									17	
									18	
									19	
									20	
									21	
									22	
									23	
									24	
									25	
									26	
									27	
									28	
									29	
									30	
									31	
									32	
									33	
									34	
									35	
									36	
									37	
									38	
									39	
									40	
									41	
									42	
									43	
									44	
									45	
									46	Total Depth 45 feet
									47	
									48	
									49	
									50	

GEOMAT 222-4142.GPJ GEOMAT.GDT 1/27/23

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Project Name: <u>BR 3121 & BR 8111 Replacements</u>	Date Drilled: <u>9/7/2022</u>
Project Number: <u>222-4142</u>	Latitude: <u>Not Determined</u>
Client: <u>T. Y. Lin</u>	Longitude: <u>Not Determined</u>
Site Location: <u>Flora Vista, NM</u>	Elevation: <u>Not Determined</u>
Rig Type: <u>CME-55</u>	Boring Location: <u>BR 8111</u>
Drilling Method: <u>7.25" O.D. Hollow Stem Auger</u>	Groundwater Depth: <u>29 Feet</u>
Sampling Method: <u>Bulk, Ring and Split spoon samples</u>	Logged By: <u>CB</u>
Hammer Weight: <u>140 lbs</u>	Remarks: _____
Hammer Fall: <u>30 inches</u>	

Laboratory Results				Blows per 6"	Sample Type & Length (in)	Symbol	Material Type	Soil Symbol	Depth (ft)	Soil Description
Dry Density (pcf)	% Passing #200 Sieve	Plasticity Index	Moisture Content (%)							
95.9	-	-	3.6	4-4	R	SM		1	Silty SAND, brown, fine- to coarse-grained, slightly damp	
-	24	NP	7.1	2-2-3	SS			2		
97.9	-	-	1.3	3-3	R			3	tan/light brown	
-	6.8	NP	2.0	4-4-5	SS			4		
98.1	-	-	2.0	5-8	R			5	tan, medium- to coarse-grained	
					GRAB			6		
								7	tan, fine- to coarse-grained	
								8	Poorly graded SAND with silt, light brown/tan, fine- to medium-grained, slightly damp	
								9		
								10		
								11		
								12		
								13		
								14		
								15		
								16		
								17		
								18		
								19		
								20	brown	
								21		
								22	medium- to coarse-grained	
								23		
								24		
								25		
98.5	-	-	7.0	6-9	R	SP-SM		26	brown, fine- to medium-grained, damp	
								27		
								28		
								29		
								30		
								31	fine- to coarse-grained, wet	
								32		
								33		
								34		
								35		
								36	soft augering, no samples recovered due to heaving sand	
								37		
								38		
								39	soft, little to no auger resistance	
								40		
								41		
								42		
								43		
								44		
								45		
								46	Total Depth 45 feet	
								47		
								48		
								49		
								50		

GEOMAT 222-4142.GPJ GEOMAT.GDT 1/27/23

A = Auger Cuttings R = Ring-Lined Barrel Sampler SS = Split Spoon GRAB = Manual Grab Sample D = Disturbed Bulk Sample SH = Shelby Tube Sampler

TEST DRILLING EQUIPMENT & PROCEDURES

Description of Subsurface Exploration Methods

Drilling Equipment – Truck-mounted drill rigs powered with gasoline or diesel engines are used in advancing test borings. Drilling through soil or softer rock is performed with hollow-stem auger or continuous flight auger. Carbide insert teeth are normally used on bits to penetrate soft rock or very strongly cemented soils which require blasting or very heavy equipment for excavation. Where refusal is experienced in auger drilling, the holes are sometimes advanced with tricone gear bits and NX rods using water or air as a drilling fluid.

Coring Equipment – Portable electric core drills are used when recovery of asphalt or concrete cores is necessary. The core drill is equipped with either a 4” or 6” diameter diamond core barrel. Water is generally used as a drilling fluid to facilitate cooling and removal of cuttings from the annulus.

Sampling Procedures - Dynamically driven tube samples are usually obtained at selected intervals in the borings by the ASTM D1586 test procedure. In most cases, 2” outside diameter, 1 3/8” inside diameter, samplers are used to obtain the standard penetration resistance. “Undisturbed” samples of firmer soils are often obtained with 3” outside diameter samplers lined with 2.42” inside diameter brass rings. The driving energy is generally recorded as the number of blows of a 140-pound, 30-inch free fall drop hammer required to advance the samplers in 6-inch increments. These values are expressed in blows per foot on the boring logs. However, in stratified soils, driving resistance is sometimes recorded in 2- or 3-inch increments so that soil changes and the presence of scattered gravel or cemented layers can be readily detected and the realistic penetration values obtained for consideration in design. “Undisturbed” sampling of softer soils is sometimes performed with thin-walled Shelby tubes (ASTM D1587). Tube samples are labeled and placed in watertight containers to maintain field moisture contents for testing. When necessary for testing, larger bulk samples are taken from auger cuttings. Where samples of rock are required, they are obtained by NX diamond core drilling (ASTM D2113).

Boring Records - Drilling operations are directed by our field engineer or geologist who examines soil recovery and prepares boring logs. Soils are visually classified in accordance with the Unified Soil Classification System (ASTM D2487), with appropriate group symbols being shown on the logs.

UNIFIED SOIL CLASSIFICATION SYSTEM						CONSISTENCY OR RELATIVE DENSITY CRITERIA				
Major Divisions				Group Symbols	Typical Names					
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels 50% or more of coarse fraction retained on No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines		Penetration Resistance, N (blows/ft.)	<u>Standard Penetration Test</u> Density of Granular Soils			
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines						
		Gravels with Fines	GM	Silty gravels, gravel-sand-silt mixtures			0-4	Very Loose		
			GC	Clayey gravels, gravel-sand-clay mixtures			5-10	Loose		
	Sands More than 50% of coarse fraction passes No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines		11-30	Medium Dense			
			SP	Poorly graded sands and gravelly sands, little or no fines		31-50	Dense			
		Sands with Fines	SM	Silty sands, sand-silt mixtures		>50	Very Dense			
			SC	Clayey sands, sand-clay mixtures		<u>Standard Penetration Test</u> Density of Fine-Grained Soils				
Fine-Grained Soils 50% or more passes No. 200 sieve	Silts and Clays Liquid Limit 50 or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands		Penetration Resistance, N (blows/ft.)	Consistency	Unconfined Compressive Strength (Tons/ft2)			
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays					<2	Very Soft	<0.25
		OL	Organic silts and organic silty clays of low plasticity					2-4	Soft	0.25-0.50
	Silts and Clays Liquid Limit greater than 50	MH	Inorganic silts, micaceous or diatomaceous free sands or silts, elastic silts					4-8	Firm	0.50-1.00
		CH	Inorganic clays of high plasticity, fat clays					8-15	Stiff	1.00-2.00
		OH	Organic clays of medium to high plasticity					15-30	Very Stiff	2.00-4.00
		Highly Organic Soils		PT				Peat, mucic & other highly organic soils		>30
U.S. Standard Sieve Sizes										
>12"	12"	3"	3/4"	#4	#10	#40	#200			
Boulders	Cobbles	Gravel		Sand			Silt or Clay			
		coarse	fine	coarse	medium	fine				

MOISTURE CONDITIONS

Dry	Absence of moist, dusty, dry to the touch
Slightly Damp	Below optimum moisture content for compaction
Moist	Near optimum moisture content, will moisten the hand
Very Moist	Above optimum moisture content
Wet	Visible free water, below water table

MATERIAL QUANTITY

trace	0-5%
few	5-10%
little	10-25%
some	25-45%
mostly	50-100%

OTHER SYMBOLS

R	Ring Sample
S	SPT Sample
B	Bulk Sample
▼	Ground Water

BASIC LOG FORMAT:

Group name, Group symbol, (grain size), color, moisture, consistency or relative density. Additional comments: odor, presence of roots, mica, gypsum, coarse particles, etc.

EXAMPLE:

SILTY SAND w/trace silt (SM-SP), Brown, loose to med. Dense, fine to medium grained, damp

UNIFIED SOIL CLASSIFICATION SYSTEM

Appendix B

LAB NO.	BORING / TEST PIT	SAMPLE DEPTH (ft)	MOISTURE CONT. (%)	SWELL POTENTIAL (%)	ASTM D1557		DENSITY		SIEVE ANALYSIS, CUMULATIVE PERCENT PASSING												ATTERBERG LIMITS			CONSOL TEST	CLASSIFICATION	
					Density	Moisture	WET (pcf)	DRY (pcf)	3/4"	1/2"	3/8"	1/4"	No. 4	No. 8	No. 10	No. 16	No. 30	No. 40	No. 50	No. 100	No. 200	LL	PL			PI
9720	B-1	5	5.2	-	-	-	-	-	100	100	100	100	100	100	100	99	81	65	51	32	18	NLL	NPL	NP	-	Silty SAND (SM)
9721	B-1	7½	2.4	-	-	-	103.3	100.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9722	B-1	10	17.5	-	-	-	-	-	100	100	100	100	100	100	100	100	100	99	99	96	80	37	16	21	-	Lean CLAY with sand (CL)
9723	B-1	15	7.3	-	-	-	101.5	94.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Attached	Poorly graded SAND (SP)
9724	B-1	25	19.0	-	-	-	127.5	107.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Lean CLAY (CL)
9725	B-2	2½	8.6	-	-	-	-	-	-	-	100	99	99	98	97	96	85	74	64	38	22	NLL	NPL	NP	-	Silty SAND (SM)
9726	B-2	5	13.6	-	-	-	110.2	97.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9727*	B-2	7½	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9728	B-2	10	7.6	-	-	-	108.4	100.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9729	B-2	10-15	-	0.2	128.1	9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9730	B-2	15	10.5	-	-	-	107.7	97.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Attached	Poorly graded SAND (SP)
9731	B-2	25	26.4	-	-	-	-	-	-	-	-	-	100	99	99	99	98	97	97	95	88	35	23	12	-	Lean CLAY (CL)
9732	B-3	5	3.7	-	-	-	100.8	97.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9733	B-3	7½	3.5	-	-	-	-	-	100	100	100	100	100	100	100	99	82	65	48	29	18	NLL	NPL	NP	-	Silty SAND (SM)
9734	B-3	10	3.8	-	-	-	102.5	98.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Poorly graded SAND with silt (SP-SM)
9735	B-3	10-15	-	0.0	128.6	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Poorly graded SAND with silt (SP-SM)
9736	B-3	15	3.3	-	-	-	-	-	100	100	100	100	100	100	100	99	70	43	24	11	6.6	NLL	NPL	NP	-	Poorly graded SAND with silt (SP-SM)
9737	B-3	20	2.8	-	-	-	102.2	99.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Attached	Poorly graded SAND with silt (SP-SM)
9738	B-4	2½	3.6	-	-	-	99.4	95.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9739	B-4	5	7.1	-	-	-	-	-	100	100	100	100	100	100	99	98	88	75	61	39	24	NLL	NPL	NP	-	Silty SAND (SM)
9740	B-4	7½	1.3	-	-	-	99.2	97.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Silty SAND (SM)
9741	B-4	10	2.0	-	-	-	-	-	100	99	98	98	97	96	96	92	62	39	23	11	6.8	NLL	NPL	NP	-	Poorly graded SAND with silt (SP-SM)
9742*	B-4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Poorly graded SAND with silt (SP-SM)
9743	B-4	15	2.0	-	-	-	100.1	98.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Attached	Poorly graded SAND with silt (SP-SM)
9744	B-4	25	7.0	-	-	-	105.4	98.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Attached	Poorly graded SAND with silt (SP-SM)

NLL = No Liquid Limit
NPL = No Plastic Limit
NP = Non-Plastic
* = Corrosivity



SUMMARY OF SOIL TESTS

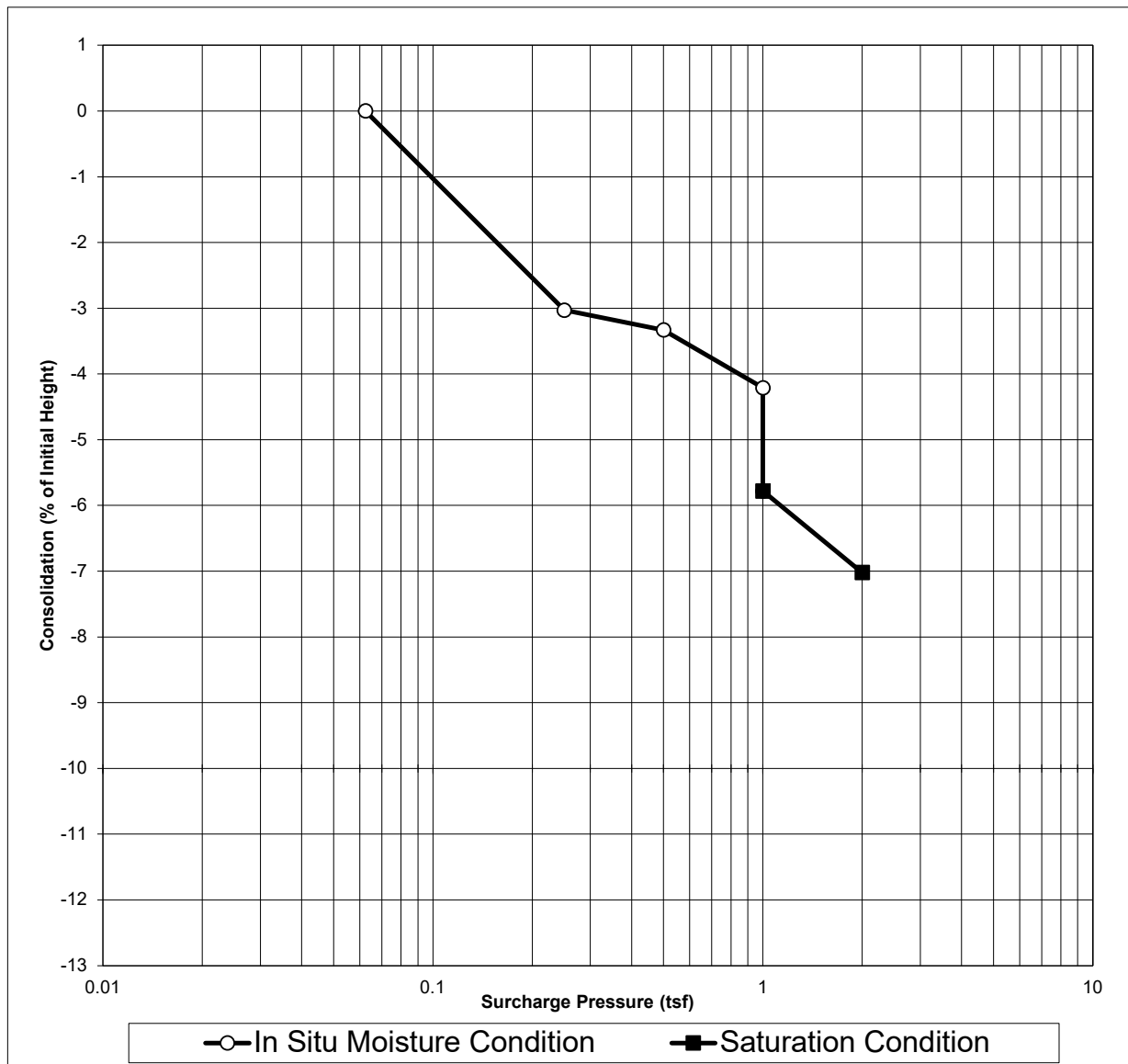
Project	BR3121 & BR8111 Replacements
Job No.	222-4142
Location	Flora Vista, NM
Date of Exploration	9/6/2022 and 9/7/2022

PROJECT: BR 3121 & BR 8111 Replacements
CLIENT: T. Y. LIN
MATERIAL: Poorly Graded SAND (SP)
SAMPLE SOURCE: B-1 @ 15'
SAMPLE PREP.: In Situ

JOB NO: 222-4142
WORK ORDER NO: NA
LAB NO: 9723
DATE SAMPLED: 9/6/2022
SAMPLED BY: CB

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.28
INITIAL MOISTURE CONTENT	7.3%	FINAL MOISTURE CONTENT	21.0%
INITIAL DRY DENSITY(pcf)	94.6	FINAL DRY DENSITY(pcf)	101.2
INITIAL DEGREE OF SATURATION	20%	FINAL DEGREE OF SATURATION	66%
INITIAL VOID RATIO	0.76	FINAL VOID RATIO	0.63
ESTIMATED SPECIFIC GRAVITY	2.651	SATURATED AT	1 tsf

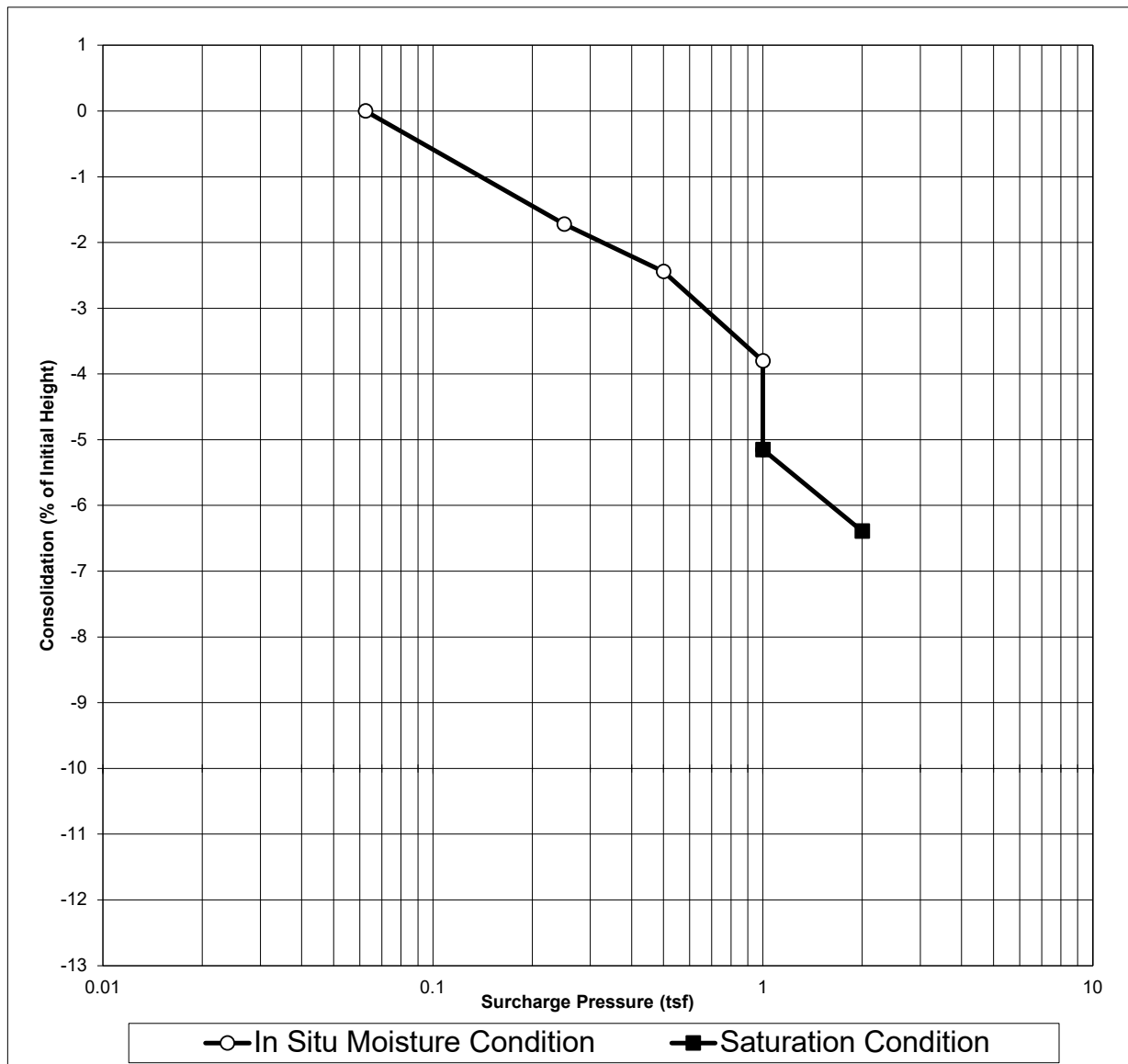


PROJECT: BR 3121 & BR 8111 Replacements
CLIENT: T. Y. LIN
MATERIAL: Poorly Graded SAND (SP)
SAMPLE SOURCE: B-2 @ 15'
SAMPLE PREP.: In Situ

JOB NO: 222-4142
WORK ORDER NO: NA
LAB NO: 9730
DATE SAMPLED: 9/6/2022
SAMPLED BY: CB

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.31
INITIAL MOISTURE CONTENT	10.5%	FINAL MOISTURE CONTENT	19.1%
INITIAL DRY DENSITY(pcf)	97.5	FINAL DRY DENSITY(pcf)	103.6
INITIAL DEGREE OF SATURATION	31%	FINAL DEGREE OF SATURATION	63%
INITIAL VOID RATIO	0.70	FINAL VOID RATIO	0.60
ESTIMATED SPECIFIC GRAVITY	2.651	SATURATED AT	1 tsf

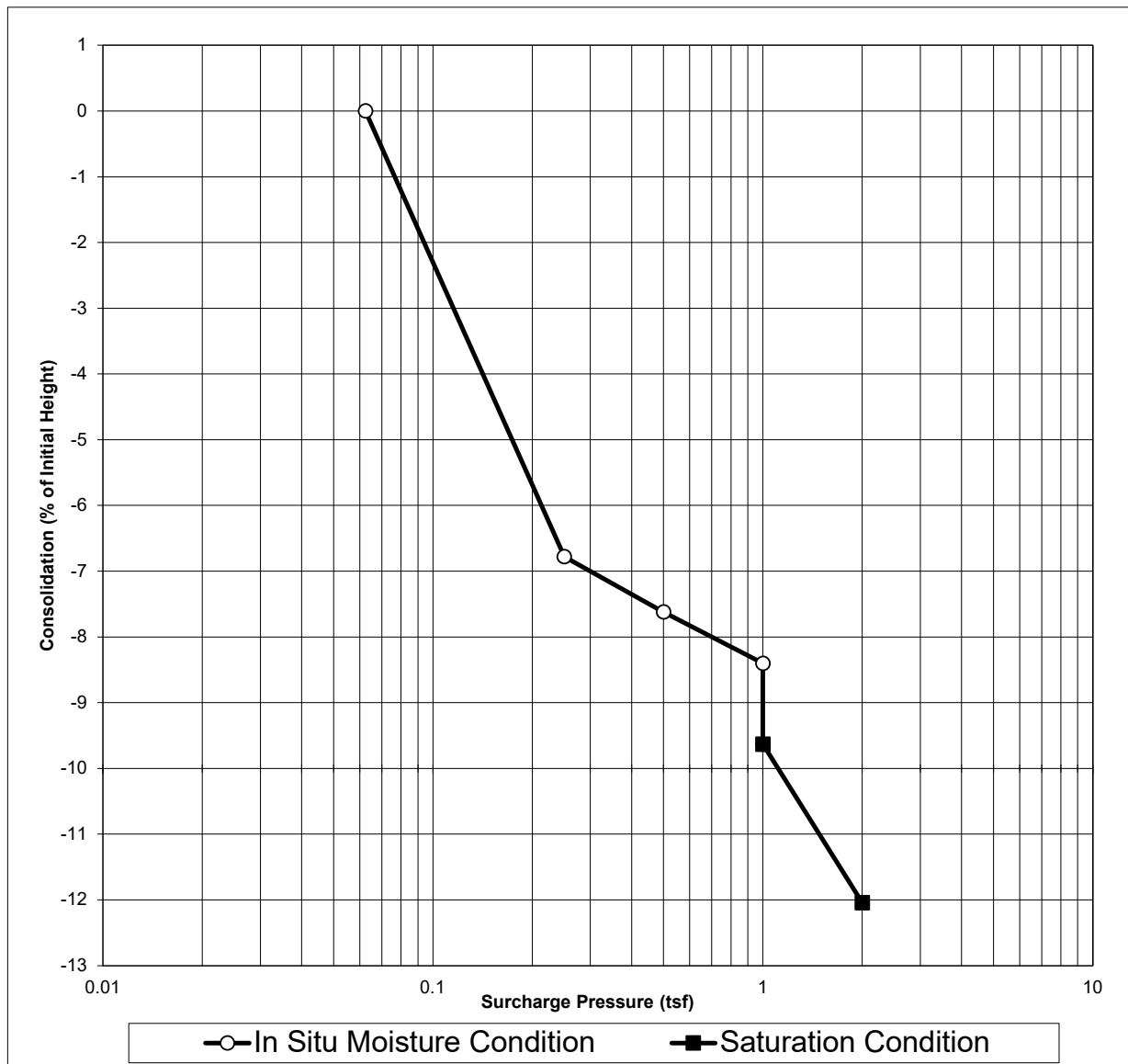


PROJECT: BR 3121 & BR 8111 Replacements
CLIENT: T. Y. LIN
MATERIAL: Poorly Graded SAND with silt (SP-SM)
SAMPLE SOURCE: B-3 @ 20'
SAMPLE PREP.: In Situ

JOB NO: 222-4142
WORK ORDER NO: NA
LAB NO: 9737
DATE SAMPLED: 9/7/2022
SAMPLED BY: CB

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.05
INITIAL MOISTURE CONTENT	2.8%	FINAL MOISTURE CONTENT	20.5%
INITIAL DRY DENSITY(pcf)	99.4	FINAL DRY DENSITY(pcf)	112.4
INITIAL DEGREE OF SATURATION	9%	FINAL DEGREE OF SATURATION	80%
INITIAL VOID RATIO	0.67	FINAL VOID RATIO	0.47
ESTIMATED SPECIFIC GRAVITY	2.651	SATURATED AT	1 tsf

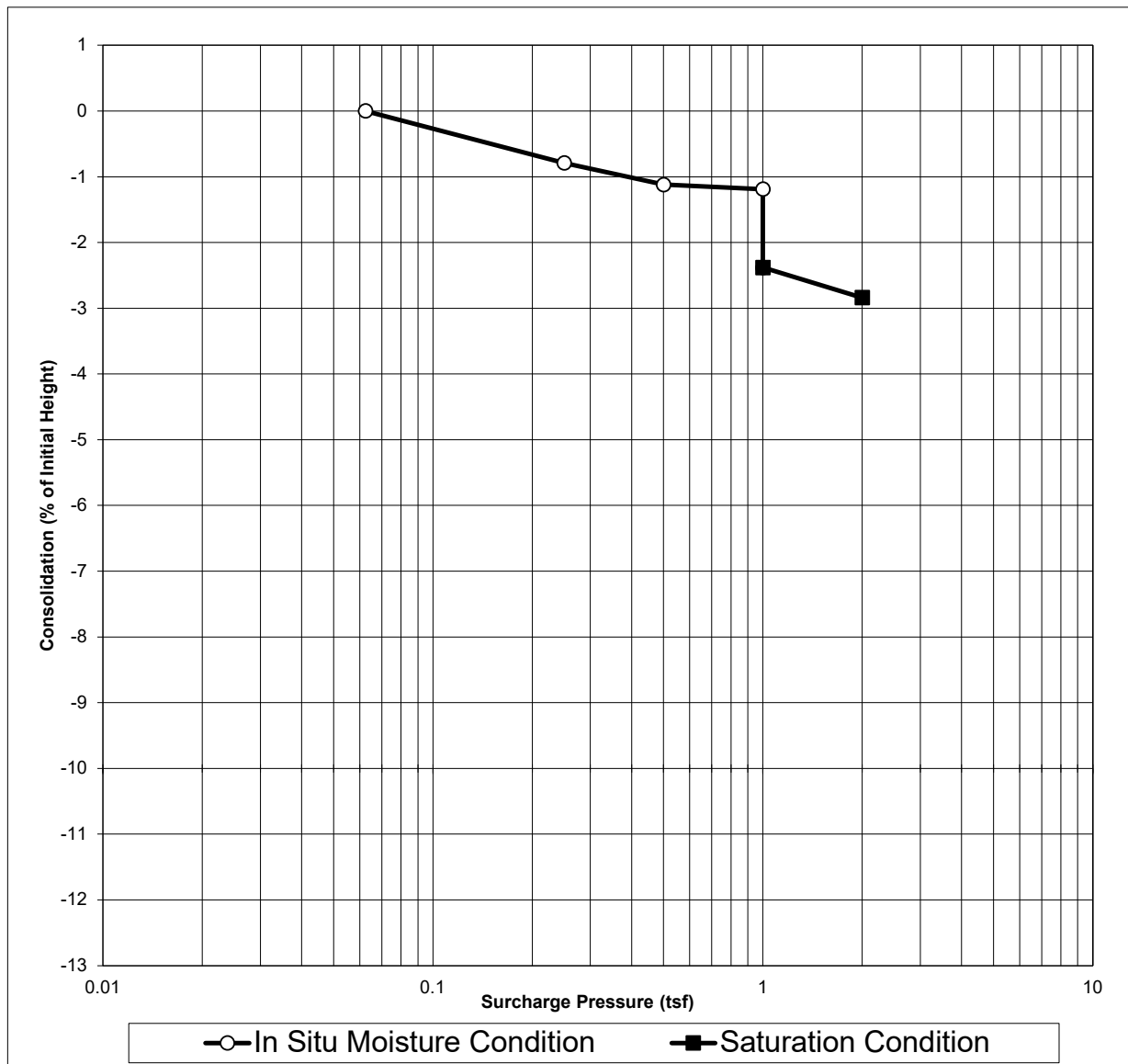


PROJECT: BR 3121 & BR 8111 Replacements
CLIENT: T. Y. LIN
MATERIAL: Poorly Graded SAND with silt (SP-SM)
SAMPLE SOURCE: B-4 @ 15'
SAMPLE PREP.: In Situ

JOB NO: 222-4142
WORK ORDER NO: NA
LAB NO: 9743
DATE SAMPLED: 9/6/2022
SAMPLED BY: CB

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.47
INITIAL MOISTURE CONTENT	2.0%	FINAL MOISTURE CONTENT	20.0%
INITIAL DRY DENSITY(pcf)	98.1	FINAL DRY DENSITY(pcf)	100.5
INITIAL DEGREE OF SATURATION	6%	FINAL DEGREE OF SATURATION	62%
INITIAL VOID RATIO	0.69	FINAL VOID RATIO	0.65
ESTIMATED SPECIFIC GRAVITY	2.651	SATURATED AT	1 tsf

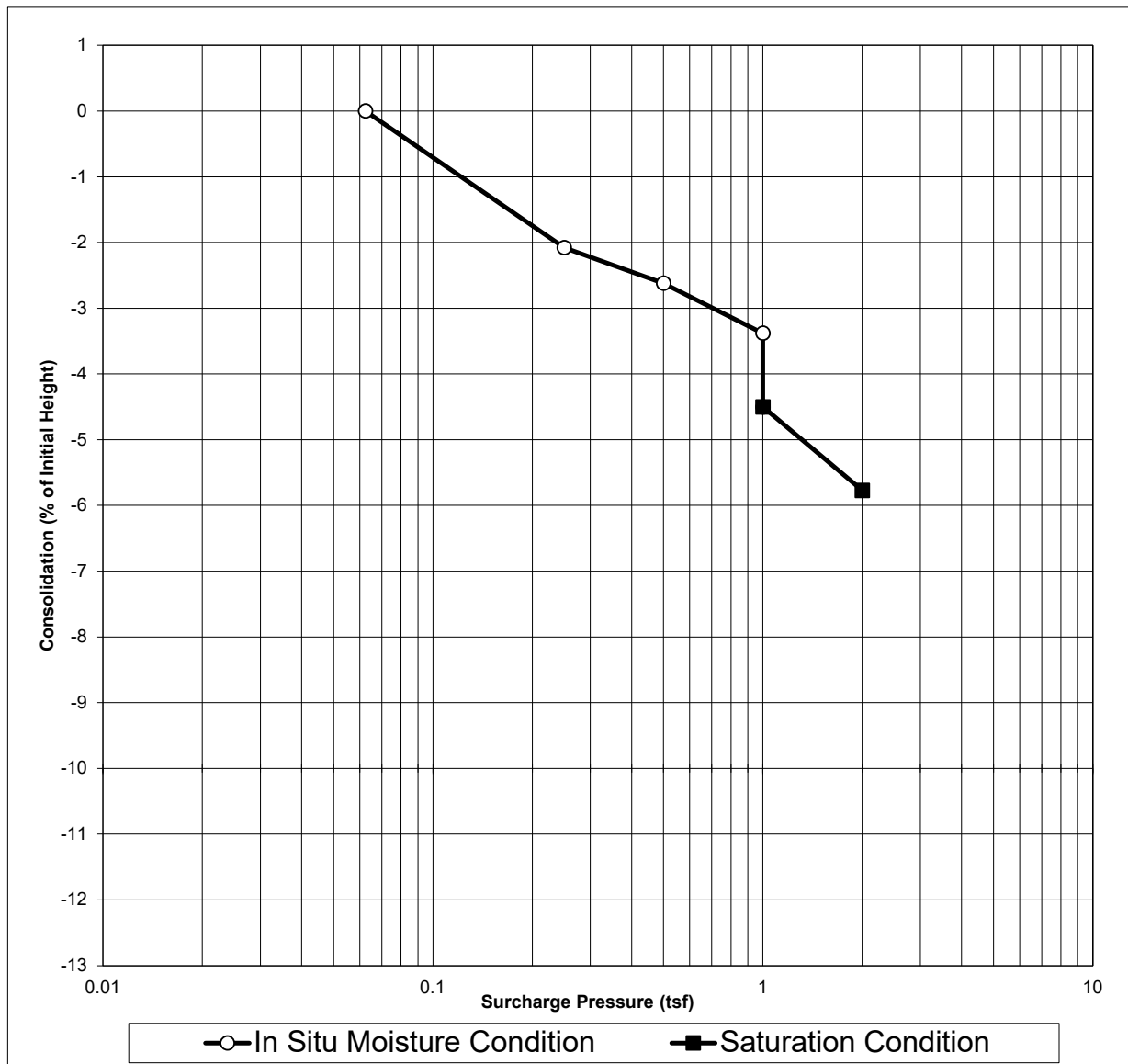


PROJECT: BR 3121 & BR 8111 Replacements
CLIENT: T. Y. LIN
MATERIAL: Poorly Graded SAND with silt (SP-SM)
SAMPLE SOURCE: B-4 @ 25'
SAMPLE PREP.: In Situ

JOB NO: 222-4142
WORK ORDER NO: NA
LAB NO: 9744
DATE SAMPLED: 9/6/2022
SAMPLED BY: CB

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.34
INITIAL MOISTURE CONTENT	7.0%	FINAL MOISTURE CONTENT	19.7%
INITIAL DRY DENSITY(pcf)	98.5	FINAL DRY DENSITY(pcf)	104.0
INITIAL DEGREE OF SATURATION	21%	FINAL DEGREE OF SATURATION	65%
INITIAL VOID RATIO	0.69	FINAL VOID RATIO	0.59
ESTIMATED SPECIFIC GRAVITY	2.651	SATURATED AT	1 tsf



LABORATORY TESTING PROCEDURES

Laboratory testing is performed by trained personnel in our accredited laboratory or may be subcontracted by GEOMAT through a qualified outside laboratory if necessary. Actual types and quantities of tests performed for any project will be dependent upon subsurface conditions encountered and specific design requirements.

The following is an abbreviated table of laboratory testing that may be performed by GEOMAT with the applicable standards listed. Testing for a specific project may include all or a selected subset of the laboratory work listed. Laboratory testing beyond those listed may be available and could be incorporated into the project scope at the discretion of GEOMAT.

PROCEDURE	ASTM	AASHTO
Moisture Content	ASTM D2216	AASHTO T 265
Sieve Analysis	ASTM C136	AASHTO T 27
Fines Content	ASTM D1140	T 11
Hydrometer	ASTM D422	T 88
Atterberg Limits	ASTM D4318	AASHTO T 89/T 90
Soil Compression/Expansion	ASTM D2435	T 216
Soil Classification	ASTM D2487	M 145
Direct Shear	ASTM D3080	T 236
Unconfined Compressive Strength of Soils	ASTM D2166	T 208
Unconfined Compressive Strength of Rock Cores	ASTM D4543	-

Appendix C

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* **Confront the risk of moisture infiltration** by including building-envelope or mold specialists on the design team. **Geotechnical engineers are not building-envelope or mold specialists.**



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e-mail: info@geoprofessional.org www.geoprofessional.org

February 15, 2023

Erin Provo, P.E.

T.Y.Lin International

500 4th Street NW #403

Albuquerque, New Mexico 87102

RE: Geotechnical Engineering Report – Addendum No. 1
BR3121 and BR8111 Bridge Replacements
Flora Vista, New Mexico
GEOMAT Project No. 222-4142

The purpose of this letter report is to provide supplemental geotechnical recommendations for proposed replacement of bridges BR3121 on County Road 3000 across Jones Arroyo and BR8111 on County Road 3500 across Flora Vista Arroyo in San Juan County, New Mexico. This letter report should be considered Addendum No. 1 to our geotechnical engineering report (GEOMAT Project 222-4180, dated January 2, 2022) and made a part thereof.

Based upon discussions with the project structural engineer Erin Provo, P.E. (T. Y. Lin International) we have considered the following items for this project.

- We have reviewed the design documents as described in an email from Erin Provo, P.E. dated February 14, 2023, with respect to the possible structural layout of the proposed drilled shafts and the location of the existing H-piles.

Based upon our understanding of the drilled shaft design that will be used and our understanding of the loading of the bridges, we recommend that the following sentence in the section **7.1.3 Drilled Shaft Construction** of the report:

- Drilled shafts should be a minimum of four (4.0) feet in diameter. Shafts should not be drilled within 10 feet of another shaft while the adjacent shaft is either open or the concrete in the shaft has not been in place for at least 12 hours.

Be replaced by the following sentence:

- Drilled shafts should be a minimum of two (2.0) feet in diameter. Shafts should not be drilled within 10 feet of another shaft while the adjacent shaft is either open or the concrete in the shaft has not been in place for at least 12 hours.
-

It is also our opinion that no reduction in the drilled shaft capacities given in the original report is required if a minimum clear distance of three (3.0) feet is maintained between the outside edge of the proposed drilled shafts and the existing H-Piles.

All other recommendations as presented in the original geotechnical engineering report remain unchanged.

Thank you for the opportunity to be of service to you on this project. If you have any questions or need additional information, please contact us.

Respectfully submitted,
GEOMAT Inc.

Chase J. Beckstead, E.I.
Staff Engineer

Matthew J. Cramer, P.E.
President, Principal

Copies to: Addressee (1)

June 19, 2023

Erin Provo, P.E.

T.Y.Lin International

500 4th Street NW #403

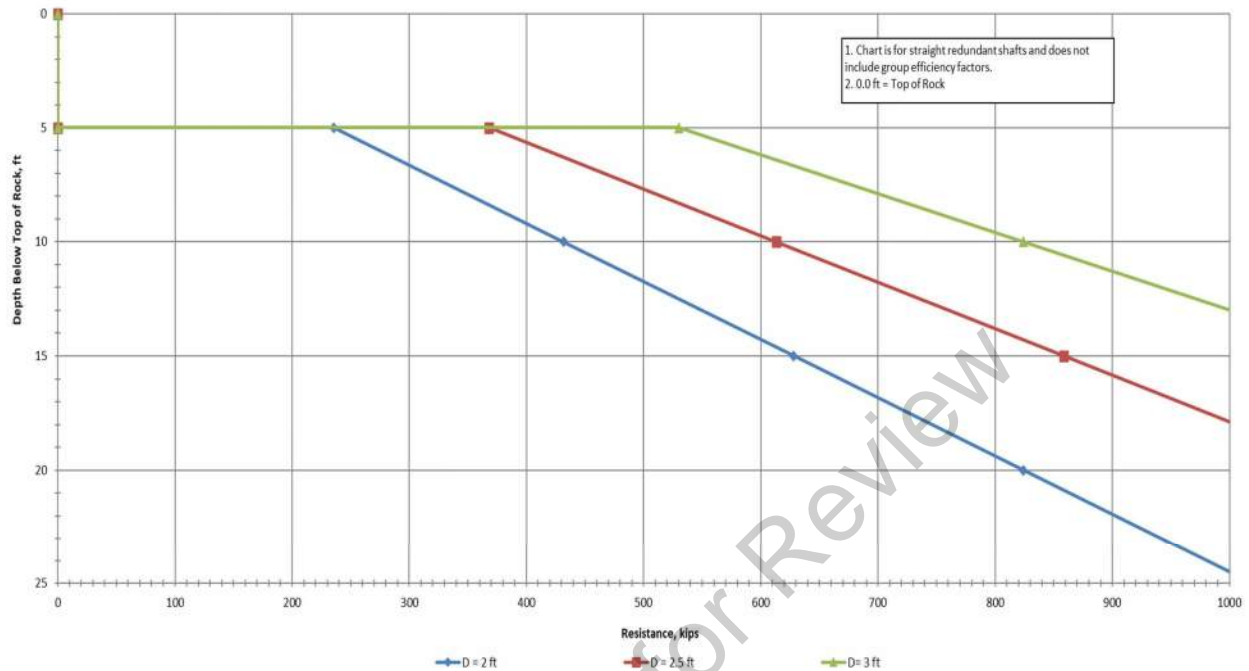
Albuquerque, New Mexico 87102

RE: Geotechnical Engineering Report – Addendum No. 2
BR3121 and BR8111 Bridge Replacements
San Juan County, New Mexico
GEOMAT Project No. 222-4142

The purpose of this letter report is to provide supplemental geotechnical recommendations for proposed replacement of bridges BR3121 on County Road 3000 across Jones Arroyo and BR8111 on County Road 3500 across Flora Vista Arroyo in San Juan County, New Mexico. This letter report should be considered Addendum No. 2 to our geotechnical engineering report (GEOMAT Project 222-4180, dated January 2, 2022) and made a part thereof.

Based upon discussions with the project structural engineer Erin Provo, P.E. (T. Y. Lin International), we understand that *AASHTO LRFD Bridge Design Specifications* are being used for the project and that the maximum factored loads per drilled pier for BR3121 will be approximately 575 kips per pier location. As such, we are presenting an updated axial resistance chart below using methods specified in the *AASHTO* code. Resistance factors of 0.55 and 0.5 were applied for side and tip resistance, respectively, in developing the factored axial resistance charts. The resistance factors were reduced by 20% for single shafts in accordance with Table 10.5.5.2.4-1 of the LRFD Specifications. The upper five (5.0) feet of rock was neglected in developing the resistance charts as described in the original geotechnical report.

BR 3121 Drilled Shaft Capacity
Factored Resistance (ϕR_n), kips



All other recommendations as presented in the original geotechnical engineering report remain unchanged.

Thank you for the opportunity to be of service to you on this project. If you have any questions or need additional information, please contact us.

Respectfully submitted,
GEOMAT Inc.

Matthew J. Cramer, P.E.
President, Principal

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